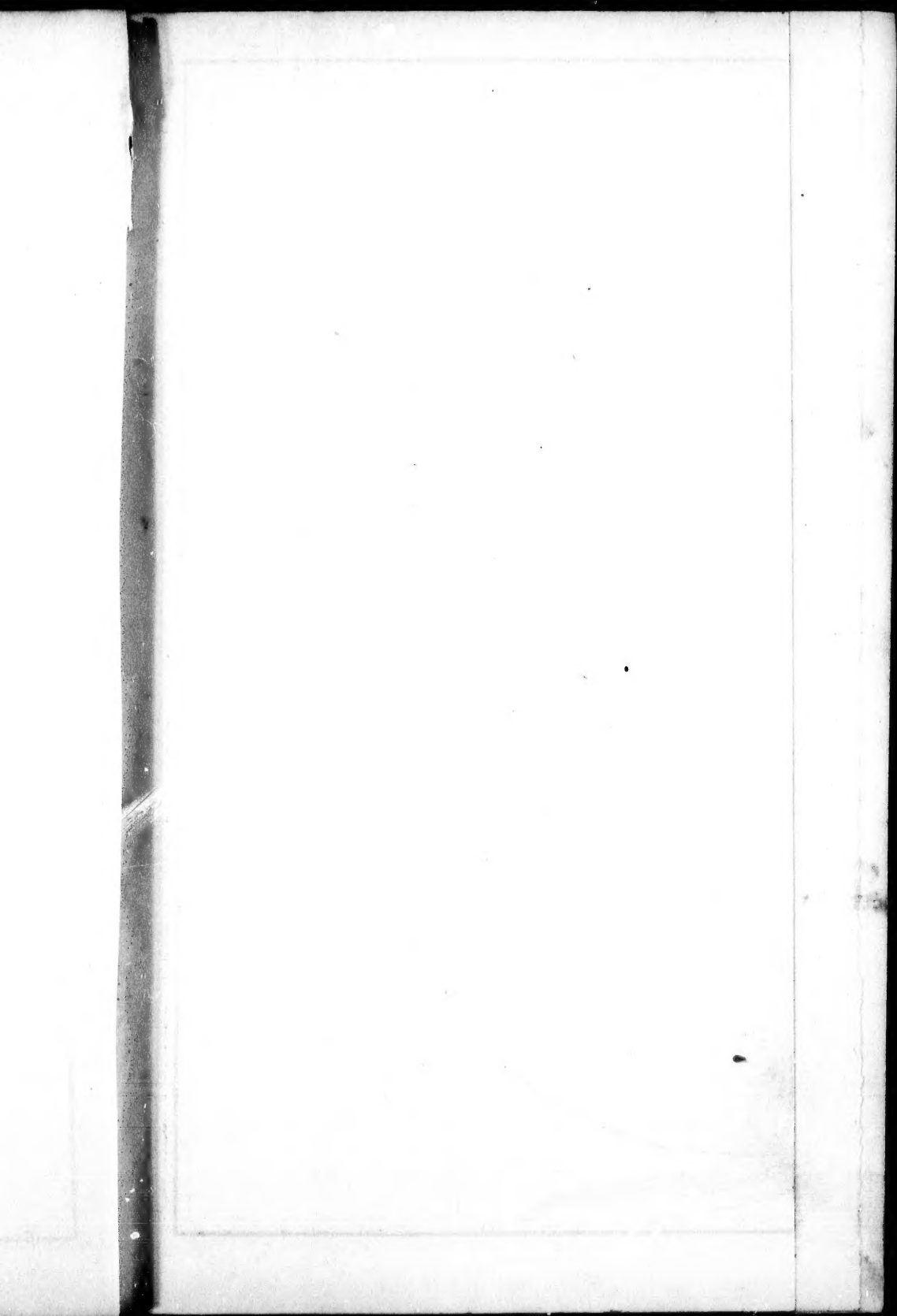
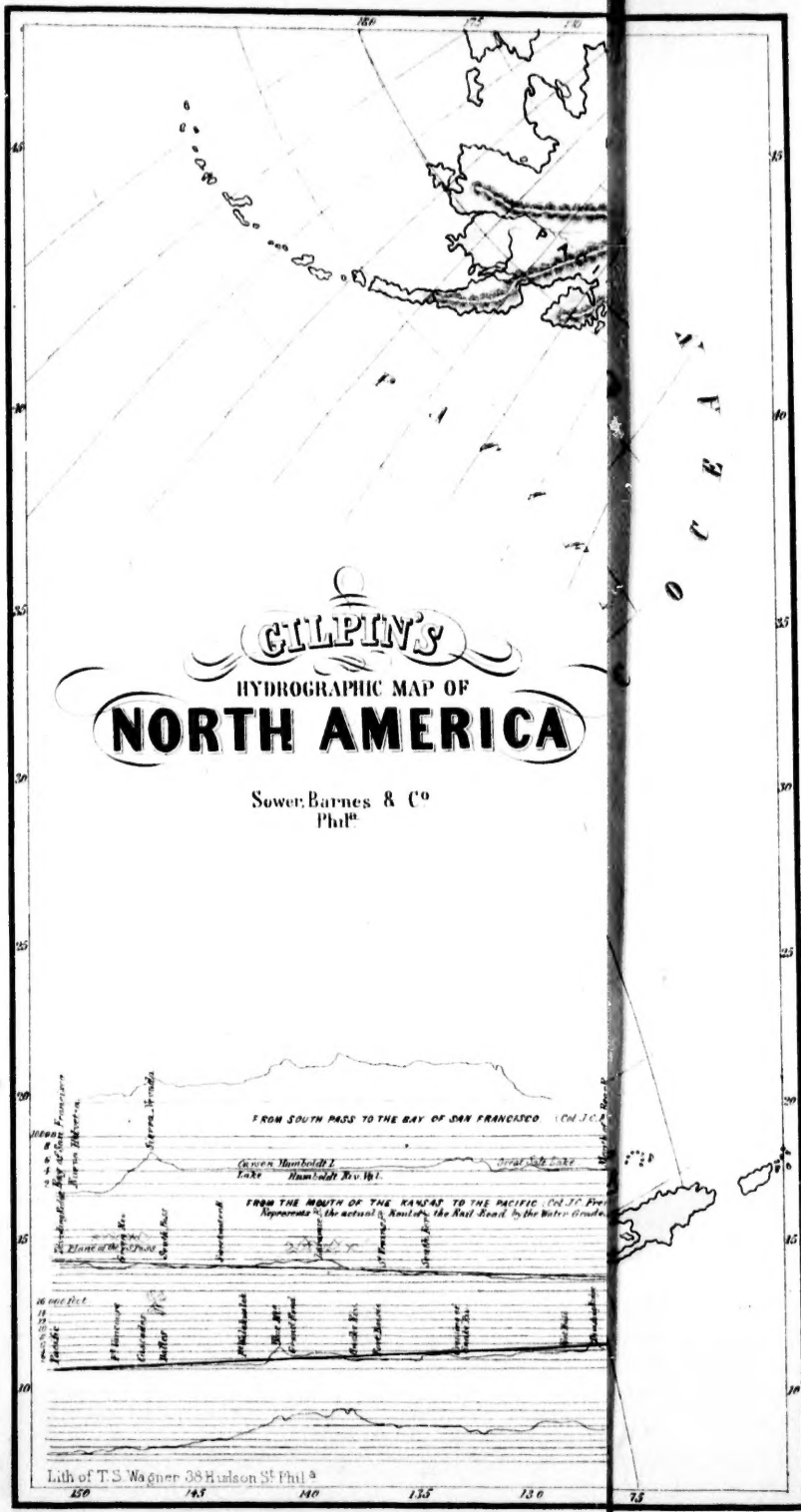






GILPIN'S
HYDROGRAPHIC MAP OF
NORTH AMERICA

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THE
CENTRAL GOLD REGION.

THE
GRAIN, PASTORAL, AND GOLD REGIONS
OF
NORTH AMERICA.

WITH
SOME NEW VIEWS OF ITS PHYSICAL GEOGRAPHY; AND
OBSERVATIONS ON THE PACIFIC RAILROAD.

BY
WILLIAM GILPIN,
LATE OF THE UNITED STATES ARMY.

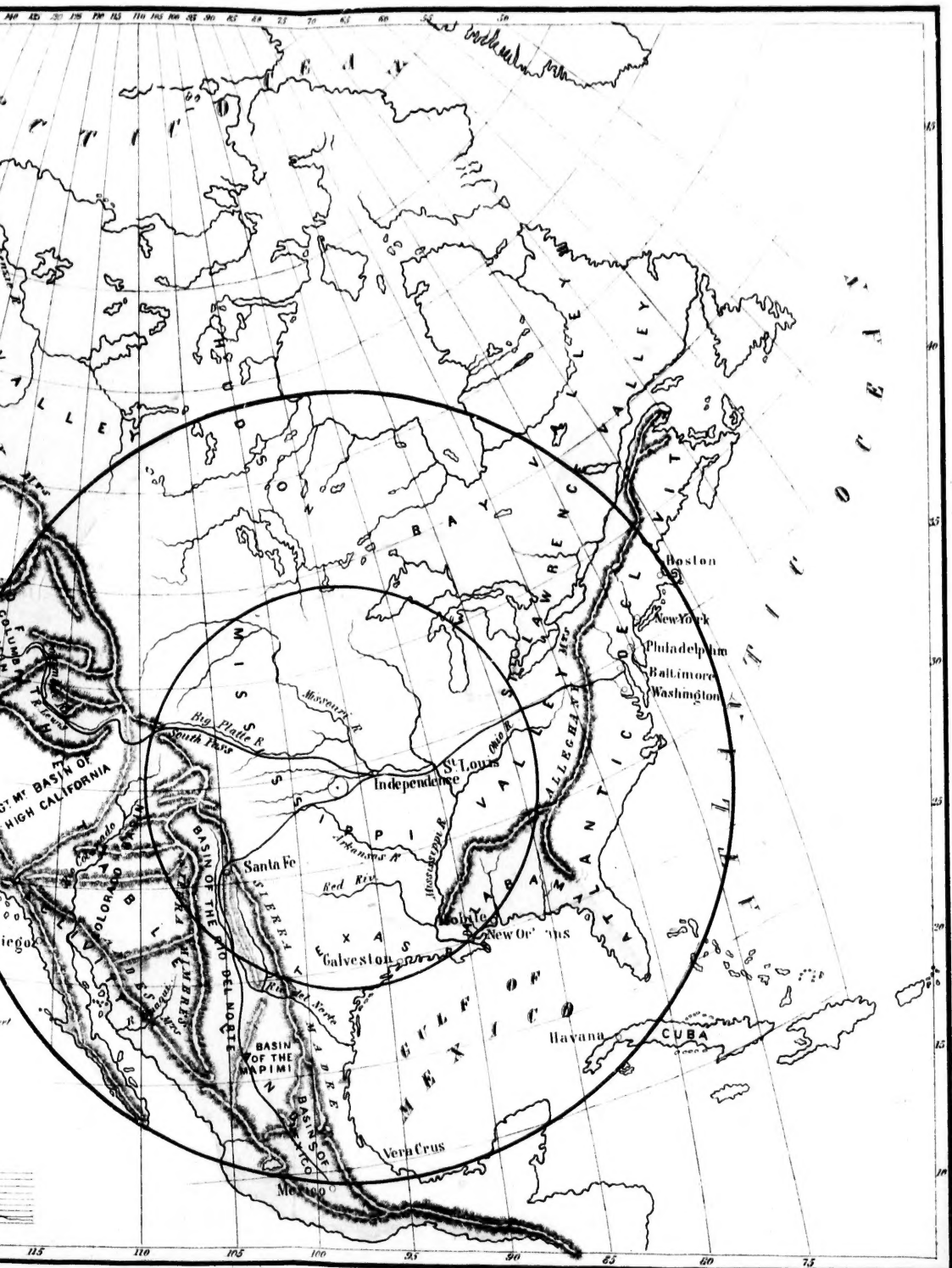
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P R E F A C E.

EVERYBODY is acquainted with the history of the American people. Their commonwealth, commenced at first by a few republican families voluntarily exiled from the old world, is now, at the end of two and a half centuries, a republican empire of established *continental* dimensions of policy. Restricted heretofore in its development, to so much of our continent as belongs to the Atlantic, a point of progress is reached, whence our energies, overflowing towards the west, expand to embrace the regions of the Pacific Ocean, and establish direct and familiar relations with Asia. This movement, long in preparation, now engages so large a force, that its advance daily acquires volume and celerity. Federal legislation, to progress *pari passu* with the people, is demanded upon a basis to give effect to the great *central* movement resulting from their energies. A liberal understanding of the mission of our people, counsels a genial expansion of the federal system to the grandest dimensions which their energies may reach.

I have condensed into a small volume, the memoranda and reflections suggested by a residence of twenty years in the wilderness, and in the midst of the pioneer people who occupy the foreground of progress, and clear open the track of empire.

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I distinguish, as the most essential present ground of development; the interval which separates the Mississippi Basin from the Pacific Ocean. This defines itself as the "*Mountain System*" of our geography. The magnitude of the obstacles which it opposes to the forces of progress assembled on its two fronts, sanctions an appeal to every form of help discernible to the patriotic heart. This needed help is in short, the construction of the *Continental Railroad*.

Two auspicious elements in human civilization by their rapid growth in power and importance fix our attention: the indefinite multiplication of gold coin, and international public works. These two elements, so operating as to mutually stimulate and sustain one another, promise to enthrone industrial organization as the ruling principle of nations. America leads the host of nations as they ascend to this new order of civilization. Her intermediate geographical position between Asia and Europe and their populations, invests her with the powers and duties of arbiter between them. Our continent is at once a barrier which separates the other two, yet fuses and harmonizes their intercourse in all the relations from which force is absent.

Human society is then upon the brink of a new order of arrangement, inspired by the universal instincts of peace, and is about to assume the grandest dimensions. Fascinated by this vision, which I have seen appear and assume the solid form of a reality in less than half a generation, I discern in it a new power, *the People* occupied in the wilderness, engaged at once in extracting from its recesses the omnipotent element of *gold coin*, and disbursing it immediately for the *industrial* conquest of the world.

WILLIAM GILPIN.

Independence, April 7th, 1860.

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THE

CENTRAL GOLD REGION.

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CHAPTER I.

GEOGRAPHICAL MEMORANDA ON THE PACIFIC RAILROAD.

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INASMUCH as the general mind seems willing to entertain with favor, and judge candidly what may be truthfully said of a NATIONAL RAILROAD TO THE PACIFIC, and everywhere is indicated a growing taste for whatever may solidly enhance the prosperity of our continental system, I have condensed into these few chapters the general views resulting from a long experience. On a subject which touches so profoundly all the existing relations of the human family, connecting three continents and uniting together, by a short line of ten thousand miles, the thousand million of people inhabiting Europe, America, and Asia; which short line traverses the middle of the north temperate zone, perforating nine-tenths of the land, the population, the production, and consumption of the world: I say, it is necessary for one who will write with dignity upon such a subject, so searching and omnipotent, to grasp boldly its immense scope of matter, to rely upon solid statistics, to face and brave old opinions, to repudiate the rubbish into which thousands of years of staggering and abortive efforts have submerged it, and to con-

dense it to the tangible form of propositions, which may be practically handled for a final solution.

The shortest trail whereby the local works, now on hand and proposed, may be understood, the public judgment matured, and opinion instructed and concentrated for *action*, is to condense by rigid analysis, and draw into one view the multitudinous facts of geography, commerce, politics, and progress under which the American people are so rapidly erecting a supreme democratic republican empire, and fitting it to the surface of the northern American continent and islands.

And *first*, must be emancipated from the dogmatic European writers (who, with procrustean despotism, rive up all other portions of the globe to fit their own pigmy theories), the symmetrical and sublime geographical plan of our continent. This, heretofore veiled from the public mind by every form of contortion, is reducible to an exact system, easily understood and eternal. The reverse geographical form in which our continent is moulded, the contrast of all the others, makes a new and original grandeur of society, not only possible, but compulsory upon us. To disinfect ourselves of inane nepotism to Europe in other things as we have done in politics, to ponder boldly on ourselves and our destiny, and develop an indigenous dignity—to appreciate Asiatic science, civilization, commerce, and population—these are *essential* preparatory steps to which we *must* tone our minds.

This, then, is the simple plan of North America:—The ANDES, having traversed the whole length of *South America*, passing out from the Isthmus of Tehuantepec, continue to follow, unchanged in character, the Pacific shore of North America clear up to Bhering's Straits. Known successively as the Cordilleras of Anahuac in Mexico, Sierra Nevada in California, and Cascade Mountains in Oregon, it is all along the same auriferous

and volcanic *Andes*, having a narrow base washed on the west by the tide, immense altitude, summits of perpetual snow, and formed of the columnar vulcan rock, or a molten mass of lava. Between this continuous escarpment of rock and the sea, is the *maritime* region of the Pacific, which contains all the present American population residing in California and Oregon, upon the smaller rivers running directly into the sea, and parallel to one another. It resembles, and is the counterpart of the *maritime* Atlantic declivity, which contains the old thirteen states, and which is shut off from the valleys of the Mississippi and St. Lawrence by the Alleghanies. But, at the Isthmus of Tehuantepec, the *Andes* bifurcates, throwing along the coast of the Mexican Gulf, the great Cordillera of the Sierra Madre, which opening rapidly from the *Andes*, as the continent widens, and assuming in our territory the name of Rocky Mountains, traverses north to the shores of the Arctic sea, being some fourteen hundred miles apart from, and to the east of the *Andes*, and forming the primary *divide*, the "*divortia aquarum*" of America. The absolute separate existence of these *two* prodigious Cordilleras, must remain distinctly in the mind, if anybody intends to understand American geography—the interval between them from end to end is occupied by the Plateau of the table lands, on which are alike the cities of Mexico, Chihuahua, and the Mormon city of the Salt Lake. This plateau of the table lands is two-sevenths of the surface of North America, is some 6000 feet elevated above the external oceans, and gives as complete a separation between the Cordilleras on the flanks, as does the Atlantic, whose waters roll between the Alleghanies and the Alps.

Thus that side of the American continent which may be defined to front Asia, and sheds its waters in that direction, has these four characteristic divisions:—the *maritime* front; the *Andes*; the Plateau of the table lands; and the Sierra Madre,

all extending the whole length from south to north, parallel to one another, and covering in the aggregate two-fifths of its whole area.

The remaining three-fifths of the continent sheds its waters towards the Atlantic. Here too the same sublime grandeur and simplicity of plan is discernible. From the Sierra Madre, the whole continent descends to the seas by immense planes, resembling the glacis of a fortress, or a flattened octagonal house roof. This plane, once the bed of immense oceans, of which the Sierra Madre was the shore, and bevelled by the action of the watery mass, now forms the gentle slope, down which descend, to replenish the oceans, the surplus waters of the Sierra Madre and the plane itself. Gutted everywhere by these descending water-courses, seaming its surface as innumerable as the veins which carry back the blood to the human heart, these aqueous channels flow down the different faces of the great plane, proportioned in length and size to the distances to be traversed. Thus down the smaller face, which fronts the Mexican Gulf, at present comprehended in Texas, run the lower Del Norte, the Nueces, Colorado, Trinity, and Brasos. Down the grand eastern front, called by us the "Great Prairie Plains," descend the Red river of Louisiana, the Canadian, Arkansas, and Kansas; the Platte (with its three forks), and the sublime Missouri itself: all of these running due east, parallel to one another, very straight and without rapids, are received into the great *central trough*, the Mississippi, which runs from north to south across their direction, and their accumulated waters are discharged into the gulf. From the same focal point with the Missouri, radiate two fronts, the one drained by the system of rivers tributary to the Saskatchewan, opening to the north-east, and widening to embrace the immense inland sea of the Hudson's Bay; the other upon the Athabasca or McKenzie river, sloping due north, and occupying the vast hyperborean region stretching to the Arctic Sea. From an ele-

vated swell in the plane between the Missouri and Saskatchewan, protruding from the Sierra Madre eastwardly along the forty-ninth degree, about 700 miles, issue the waters of the Upper Mississippi and St. Lawrence. The first goes directly south to scour out the *trough* of the continent. The latter flows down the narrow basin of the lakes and their river St. Lawrence, to where the *glacis* reaches the sea, and forms the shores of the gulf of that name.

Thus, from the dividing wall of the Sierra Madre, the continent descends uninterruptedly to the gulf, the North Atlantic, and the Arctic Seas. The perfect gentleness of this descent, scarcely distinguishable from a level, is perceptible from the rivers, which are entirely free from rapids and everywhere navigable when water is sufficient in their beds. The sublimest example is the watery surface of the Missouri, whose liquid plane, dipping by perhaps thirteen inches to the mile, has an unruffled uniformity of descent through its whole course of 5000 miles to the sea.

But to render complete this geographical delineation, there rises all along the Atlantic, and parallel with its shore, the dividing range of the Alleghany, uninterrupted from Baton Rouge to the Gulf of St. Lawrence. External to this is the narrow seaboard declivity which first received the European settlements, and still holds the densest population; but *within*, a reverse *glacis* descends to the Mississippi and St. Lawrence, filled with states to the central trough of the continent. Practically, the basins of these great rivers are narrowed to mere passes at their mouths by the points of the mountain chains which fence them from the sea, expanding to an immense breadth in the interior, and fading into one another, where they touch, by prairie divides of imperceptible elevation. They form together one vast bowl, whose waters flow from the circumference near the seas,

inwards, to centres which are near and already connected by art as at Chicago. This bowl or plain is everywhere calcareous, being paved beneath the soil with an undulating covering of limestone, as is a frozen lake with one of ice.

To recapitulate and grave it upon the mind, as with the style wherewith the artist cuts into steel the deeply shaded lines of a picture, the whole Atlantic side of the continent is *one calcareous* plain of many fronts, each front having a mighty system of arteries, demonstrating its gradual slope, and carrying its surplus waters to the sea; and yet by the rising of the eastern halves of the basins against the Atlantic barriers it is also a sublime bowl, into which the waters have first a concentric direction, as they accumulate into the troughs that conduct them to the sea. The superlative wonder about this is, that here, in North America, is rolled out in one uniform expanse of 2,300,000 square miles, an area of arable land equivalent in surface to the aggregate of the valleys of the other continents, which are small, single, and isolated. Moreover, the interlacing of the rivers forms everywhere a complete system of navigation, blended into one by public works of the easiest construction, and forming, by their double banks, a shore line equal in extent to the coasts of all the oceans.

To master the geographical portrait of our continent thus in its unity of system, is *necessary* to every American citizen—as necessary as it is to understand the radical principles of the Federal Government over it, and of political society. Our country is immensely grand, and to understand it in its simple grandeur, is not an extravagance, but is a homespun matter-of-fact duty. If we flinch from this duty, we recede from the divine mission chalked out for us by the Creator's hand, sink below the dignity of our ancestors, and fall into the decrepitude of the voluntary, illiterate, and emasculate *subjects* of Europe.

To enforce these truths with yet greater stringency, and to tempt or lash the popular mind out of its cringing and criminal torpidity, still another illustration remains of the paramount significance to us of geographical facts. This is the *contrast* between our own and the other four continents.

Europe, the smallest of the grand divisions of the land, contains in its centre the icy masses of the Alps; from around their declivities *radiate* the large rivers of that continent. The Danube directly east to the Euxine; the Po and Rhone south to the Mediterranean; the Rhine to the Northern Ocean. Walled off by the Pyrenees, and Carpathians, divergent and isolated, are the Tagus, the Elbe, and other single rivers, affluents of the Baltic, the Atlantic, the Mediterranean, and the Euxine. Descending *from* common radiant points, and diverging every way from one another, no intercommunication exists between the rivers of Europe; navigation is petty and feeble; nor have art and commerce, during many centuries, united so many small valleys, remotely isolated by impenetrable barriers. Hence upon each river dwells a distinct people, differing from all the rest in race, language, habits, and interests. Though often politically amalgamated by conquest, they again relapse into fragments from innate geographical incoherence. The history of these nations is a story of perpetual war, of mutual extermination; and an appalling dramatic catalogue of a few splendid tyrannies, crushing multitudinous millions of submissive and unchronicled serfs.

Exactly similar to Europe, though grander in size and population, is Asia. From the stupendous central barrier of the Himalahs run the four great rivers of China, due east, to discharge themselves beneath the rising sun; towards the south run the rivers of Cochin China, the Ganges and the Indus; towards the west, the rivers of the Caspian; and north through Siberia to the Arctic seas, many rivers of the first magnitude. During

fifty centuries, as now, the Alps and Himalaya mountains have proved insuperable barriers to the amalgamation of the nations around their bases, and dwelling in the valleys which radiate from their slopes. The continent of Africa, as far as we know the details of its surface, is even more than these split into disjointed fragments. Such also, in a less degree, is South America.

Thus, whilst Northern America opens towards heaven in an expanded bowl to receive and fuse harmoniously whatever enters within its rim ; so each of the other continents presenting a bowl reversed, scatters everything from a central apex into radiant distraction. Political empires and societies have in all ages conformed themselves to these emphatic geographical facts. The American Republic is then *predestined* to expand and fit itself to the continent. Much is uncertain, yet through all the vicissitudes of the *future*, this much of eternal truth is discernible : In geography the antithesis of the Old World, in society it is and will be the reverse. *Our* North America will rapidly attain to a population equalling that of the rest of the world combined ; forming a single people, identical in manners, language, customs, and impulses : preserving the same civilization, the same religion ; imbued with the same opinions, and having the same political liberties. Of this we have two illustrations now under our eye : the one passing away, the other advancing. The aboriginal Indian race, amongst whom, from Darien to the Esquimaux, and from Florida to Vancouver's Island, exists a great identity in their hair, complexion, features, stature, and language. And second, in the instinctive fusion into one language, and one new race, of immigrant Germans, English, French, and Spanish, whose individuality is obliterated in a single generation !

It is thus that the holy question of our *Union* lies in the bosom of *nature* ; its perpetuity in the hearts of a great demo-

cratic people, imbued with an understanding and austere reverence for her eternal promptings and ordinances: it lies not in the trivial temporalities of political taxation, African slavery, local power, or the nostrums of orators however eminent. It is the truth, established by *science*, and not the deductions of metaphysics, with which the people must fortify themselves.

As power resides in the people and the *suffrage* is its exercise, with them also must reside intelligent and wise counsel. To be certain that the great principles on which they rely to strengthen and perpetuate human rights, are the truthful deductions of exact science, and in harmony with nature, is the individual duty of the citizen. To reject what is otherwise, is the only safety from usurpation and tyranny. To assert that the mass are deficient in intelligence to comprehend and use familiarly the truth of science, is the language of tyrants and perfectly false. Behold an eternal example of universal dissemination and familiar use of scientific truths. The alphabet of *twenty-six letters* and the numerals of *ten figures*, are the most profound, condensed, and sublime forms of abstract truth which science has or can give to the human race. How many ages and how great a mass of intellectual analysis and research consumed itself to reach this abstract quintessence of truth, have not come to us with the inventions themselves. At sight of a volume printed, or a newspaper, the intelligent savage is crushed with a sense of despair, not knowing that a few years of study will render intelligible to him this mass of chaotic mystery. The child of civilized society, on the contrary, commencing with the alphabet which science has discovered and bequeathed, combines letters into syllables, syllables into words, words into sentences, and has opened to him, by an easy ascent, the knowledge which written language has accumulated and perpetuated since its invention, some thousand years ago. Believing that abstract truths, wherever reached in other

departments of human affairs—as for instance in geography—may, in like manner as the alphabet, be universally received, trusted, and used by the people, I have written these remarks and constructed the map which accompanies them. They agree with the speculations of the scientific writers whom I have been able to consult, especially Humboldt and Jefferson. If this abstract of simple geographical elements be truth, then should they stand the basis of political reason, as the ten commandments stand in the field of religion. Admitted to be true, the future of the American republic, expanding to fit the continent, as the human foot within a shoe, and brightening the world with its radiance, is familiarly discernible. The general continental geography, filling up the details of its surface, as the flesh and muscles cover the human skeleton, will readily be conceived in the mind, and assume order and symmetry. Variety of climates and of altitude; the consequent distribution of industry; the immense commerce which will adjust the interchanges of so vast a surface so variously occupied; the union by public works of the fluvial arteries descending opposite slopes; the connections with the external continents; and the forms of states, rising consecutively till they shall number ONE HUNDRED; all these successive events become the current creations of a natural order of progress, and will be the easy deductions of exact calculation of time from statistical data.

To come finally to solve the question of the construction of the Pacific Railroad, it is necessary to analyze the present condition of commerce, both of our own and external countries; how far it is friendly or hostile to the immense modifications such a new route will engender; to probe the temper and force of political power and jealousies; to reason out and balance the friendly and hostile elements that bear upon it; and, finally, to subject to the most searching scrutiny the topographical character of the immense space of our continent interrupted by the "Plateau

of the Table Lands; the great mountain ranges of the Sierra Madre, and the Andes, with their external slopes. To such a complete discussion, this is preliminary.

CHAPTER II.

GEOGRAPHICAL MEMORANDA ON THE PACIFIC RAILROAD.—

Continued.

I HAVE mentioned in the preceding chapter, in which I endeavored to delineate, in a condensed form, the abstract geographical elements of our continent, that I had compiled, with great labor, a map, exhibiting to the eye, as it were in daguerreotype, what is so difficult to make comprehensible in writing to the popular mind. In truth, this simple classification has long ago suggested itself to me, resulting from observations made and facts collected during immense journeys, which I have made out to the rim of the continent, on all its coasts—sometimes as a solitary pioneer, and at others in the military service. These wanderings have extended over fifteen years of time, and more than forty thousand miles! Uncertain as to the accuracy of these facts, long rendered indistinct and hazy by the vastness of the details—finding myself everywhere repelled by the *soi-disant* learned in science and politics; and being, also, without the pecuniary means to reach *the people*, it is only now that I venture to appear before them. Neither do I rely upon my own reflections exclusively. The world has lately received from the learned Humboldt his two works, “Cosmos” and “The Aspects of Nature.” This pre-eminent veteran in science, commenced sixty years ago, to hive and condense the truths that he now gives us in these small volumes. Nine years were then given by him to exploration and study among

the Andes of South America and Mexico, and subsequently ten years among the Himmalayas of Central Asia. It is only now, at the age of eighty years, that he ventures to give to the world the condensed quintessence of a whole life of travel, intense study, rigid analysis, and meditation. Though not clearly known to him (for he has not visited our country, or been able to collect the material to supply this deficiency, from others), he has, in his delineations of Peru and Mexico, exactly sketched our own Andes in California and Oregon. His descriptions of the great plateaux of Central Asia, the Caspian Sea, and Thibet, with their surrounding mountain chains, applied to our continent, solve for us the enigma of our own geography. Indeed, if the continent of Asia be turned at right angles, so that Siberia should face the rising sun, it would almost exactly resemble and explain all North America included between the *trough* of the Mississippi and the Pacific. In short, in these small volumes—"Notes on Virginia" and "Cosmos," of the brave apostles of truth, Jefferson and Humboldt—in these we have condensed facts enough to guide us to the most distinct and perfect solution of the whole scheme of our own continental geography.

To resume, then, the discussion of geographical facts, and approach cautiously, step by step, the *location* made by nature for the CONTINENTAL RAILROAD, we must have clearly in the mind the great central crest of the Sierra Madre, and the two sides of the continent sloping on either hand to the oceans. Very many great rivers, bursting from the eastern mountain flank, descend, without rapids, by the Mississippi to the Gulf; by the St. Lawrence to the North Atlantic. Even the Alleghanies, having but 2000 feet elevation, present but a secondary obstacle. Abundant routes exist, therefore, whereby a railroad may pass up from the eastern coast line of the continent to the flanks of the Sierra Madre. Whatever slight elevations may exist in the general

surface, they are all perforated successively by continuous rivers, whose banks offer water grades, uninterrupted during the whole ascent. No difficulty here presents itself.

But "that side of the American continent which may be defined to front Asia, and sheds its waters in that direction, has these four characteristic divisions: the *maritime* front, the Andes, the Plateau of the Table Lands, and the Sierra Madre; all extending the whole length, from south to north, parallel to one another, and covering, in the aggregate, two-fifths of its whole area."

The *maritime* front is narrow, has many small streams in which the flowing tide reaches the base of the Andes, and presents no obstacles of any significance. Through the two Cordilleras, the Andes, and the Sierra Madre, which flank and elevate themselves above the level of the TABLE LANDS, are many passes admitting of the passage of railroads, but merely from the outside on to the Table Lands within. The TABLE LANDS are, however, ribbed by latitudinal ranges of mountains, of immense bulk and height. The solution, therefore, condenses itself to the discovery of a single line, whereby the Sierra Madre, the ribs of the TABLE LANDS, the lofty crest of the Andes, and its abrupt western wall, may all be continuously and consecutively overcome, surmounted, or evaded.

I quote from a memoir given to the public by myself, some years ago, this description of the Table Lands:—

The distance to the Pacific from the top of the Sierra Madre (Rocky Mountains), where you leave behind the waters flowing to the Atlantic, is everywhere some 1500 miles. The topographical character of this ultramontane region is very grand and characteristic. It is identical with the region at the sources of the La Plata, Amazon, and Magdalena, of South America, but more immense. Sketched by its great outlines it is simply this:

The chain of the Andes debouching north from the Isthmus, opens like the letter Y into two primary chains (Cordilleras). On the right the Sierra Madre, trending along the coast of the Mexican Gulf, divides the Northern Continent almost centrally, forming an unbroken water-shed to Bhering's Strait. On the left, the Andes follows the coast of the Pacific, warps around the Gulf of California, and, passing along the coast of California and Oregon (under the name of Sierra Nevada), terminates also near Bhering's Strait.

The immense interval between these chains is a succession of *intra-montane* basins, *seven* in number, and ranging from south to north. The whole forms the great plateau of the Table Lands.

First, is the "Basin of the City of Mexico," receiving the interior drainage of both Cordilleras, which waters, having no outlet to either ocean, are dispersed again by evaporation.

Second, the "Bolson de Mapimi," collecting into the Laguna the streams draining many states, from San Luis Potosi to Coahuila, also without any outflow to either ocean.

Third, the "Basin of the Del Norte," whose vast area feeds the Rio del Norte, the Conchos, and Pecos. These, concentrated into the Rio Grande del Norte, behind the Sierra Madre, have, by their united volume, burst through its wall, and found an outlet towards the Atlantic. The geological character of this basin, its altitude, its configuration, and locality, all assign it this position, as distinguishing it from all others contributing their waters to the Atlantic.

Fourth, the "Basin of the Great Colorado of the West." This immense basin embraces *above* the great rivers Rio Verde and Rio Grande, whose confluent waters penetrating the mighty Cordillera of the Andes athwart, from base to base, discharge themselves into the Gulf of California. Into this sublime gorge (the Canon of the Colorado), the human eye has never swept for

an interval of 375 miles. So stern a character does Nature assume where such stupendous mountains resist the passage of such mighty rivers.

Fifth, the "Basin of the Great Salt Lake," like the Caspian of Asia, containing many small basins within one great rim, and losing its scattered waters by evaporation, has no outflow to either ocean.

Sixth, the "Basin of the Columbia," lying across the northern flanks of the two last, and grand above them all in position and configuration. Many great rivers, besides the Snake and Upper Columbia, descend from the great arc of the Sierra Madre, where it circles towards the north-west from 43° to 52° , flow from east to west, and concentrate above the *Cascades* into a single trunk, which here strikes the mighty Cordillera of the Andes (narrowed to one ridge), and discharges itself through this sublime pass at once into the open Pacific. It is *here*, descending by the grade of this river the whole distance from the rim of the Valley of the Mississippi, and through the Andes to the Pacific, that the great *debouch* of the American Continent towards the West is found—and here will be the pathway of future generations of the New World, as the people of the Old World pass down the Mediterranean, and out by Gibraltar.

Above, the "Basin of Frazer River" forms a *seventh* of the TABLE LANDS. This has burst a canon through the Andes, and, like the fourth and sixth basins, sends its waters to the Pacific. With the geography of the more northern region we are imperfectly acquainted, knowing, however, that from Puget's Sound to Bhering's Strait, the wall of the Andes forms the beach itself of the Pacific, whilst the Sierra Madre forms the western rim of the basins of the Saskatchewan of Hudson's Bay, and the McKenzie of the Arctic seas.

Thus, then, briefly we arrive at this great cardinal department

of the geography of the Continent, viz.: the TABLE LANDS,—being a longitudinal section (about two-sevenths of its whole area), intermediate between the two oceans, but walled off from both, and having but three outlets for its waters, viz.: the canons of the Rio Grande, the Colorado, and the Columbia. Columnar basalt forms the basement of this whole region, and volcanic action is everywhere prominent. Its general level, ascertained upon the lakes of the different basins, is about 6000 feet above the sea. Rain seldom falls, and timber is rare. The ranges of mountains which separate the basins are often rugged, and capped with perpetual snow, whilst isolated masses of great height elevate themselves from the plains. This whole formation abounds in the precious metals. Such is the region of the TABLE LANDS.

Beyond these is the MARITIME region, for the great wall of the Andes, receding from the beach of the Pacific, leaves between itself and the sea a half valley, as it were, forming the seaboard slope from San Diego to the Straits of Juan de Fuca. This is 1200 miles in length, and 200 broad. Across it descends to the sea a series of fine rivers, ranging from south to north, like the little streams descending from the Alleghanies to the Atlantic. These are the San Gabriel, the Buenaventura, the San Joachim, and Sacramento, the Rogue, Tlameth, and Umqua rivers, the Wallamette and Columbia, the Cowlitz, Chekalis and Nasqually, of Puget's Sound. This resembles and balances the maritime slope of the Atlantic side of the Continent; but it is vastly larger superficially; of the highest agricultural excellence; basaltic in formation; grand beyond the powers of description, the snowy points and volcanoes of the Andes being everywhere visible from the sea, whilst its climate is entirely exempt from the frosts of winter.

The configuration of the Sierra Madre (the Mother Mountain of the world) is transcendently massive and sublime. Rising

from a basement whose roots spread out two thousand miles and more, its crest splits almost centrally the Northern Continent, and divides its waters to the two oceans. Novel terms have been introduced to define its characteristics: *Mesa*, expresses the level plateaux of its summits. *Canon*, the gorges rent in its slopes by the descending rivers. *Bute*, the conical mountains isolated and trimmed into symmetrical peaks by atmospheric corrosion.

Everybody has seen the card-houses built by children in the nursery. Suppose three of these in a row, having a second story over the centre: this toy familiarly delineates a transverse section of the Sierra Madre. The top of this upper story represents the central primary *mesa* of the Cordillera—its summit a great plain, descending on both flanks by a perpendicular wall of 6000 feet to the level of the *second mesa*, or steppe. Towards the west the second mesa fills the whole space to the Andes, whose farther side descends abruptly to the tide-level of the Pacific. This is again what has been before described at length as the GREAT TABLE LANDS.

But towards the east, the second mesa forms a Piedmont, rent into peaks by the fissures of innumerable streams. This Piedmont, called by us the Black Hills, masks the front of the Sierra Madre from end to end. So completely is it torn and rent by the perplexity of watercourses, that patches alone are left to define the original plateau. These are the eastern envelope of the basin of the Yellow Stone, the Laramie Plain (between the Plattes), the Ratone and the Llano Estacado of Texas. Beneath this the *third mesa* (or steppe) is that superlative region, the GREAT PRAIRIE PLAINS, whose gentle slope forms a glacis to the gulf through Texas, and in front to the trough formed by the Mississippi river from Itasca Lake to the Balize.

It is this vastness of geographical configuration which leads the *glance* of the engineer with unerring certainty to that line

of natural grades from ocean to ocean, the discovery of which mankind now awaits with the keenest interest, and along which the American nation is resolved to construct the consummate work of art—THE ASIATIC AND EUROPEAN RAILWAY.

Advancing north along the comb of the Sierra Madre from below Mexico, you find at the sources of the Platte (Sweetwater), a wide gap, where the high mesa suddenly giving out for the space of forty miles, the second mesa passes through from east to west, the continued water-ridge being scarcely perceptible amongst its gentle undulations. This is the "South Pass." It is so named as being the *most southern* pass, to which you may ascend by an affluent of the Atlantic, and step immediately over, to a stream descending directly to the Pacific. This name is as ancient as the pass itself. Into it concentrate the great trails of the buffalo, geographers and road-makers by instinct, before the coming of man. The Indian, the Mexican, and the American, successors of one another, have not improved or deflected from the instincts of the buffalo, nor will they, whilst the mountains last in their present unshattered bulk. The South Pass has a towering grandeur, in keeping with the rivers between which it is the avenue (the Missouri, the Colorado, and the Columbia), all of which issuing from the wall of the Wind River Mountain, come out of it upon the second mesa, *at the same level*, and into which they immediately commence burrowing their canons of descent to the seas.

Here then, is the route, the *southern* route of the National Railroad, ascending by the water grade of the Platte to the top of the second mesa, where it forms the summit, following the level of this mesa along the base of the high mesa, to the Columbia (Snake river), and descending its water-grade clear to the Pacific.

The distance from the Platte to the Columbia has not been

accurately ascertained, though by the present wagon-road, which crosses a corner of the Salt Basin, it is less than 300 miles. Here is that double-inclined plane, to find which has been the first essential in every line of transportation existing in the world. There is none *south* of this, because everywhere the basins of the Table Lands overlap and envelope one another, so that the passes lead merely from one of these into another; nor are there any natural tunnels through the precipitous walls of the Andes, and between the basins.

The Columbia, running across the Table Lands from east to west, distributes the descent of 8500 feet equally along its course of 1200 miles, and tunnels the great ranges of Blue Mountains and the Andes. This whole course of the river is a continuity of rapids, having three falls, the American falls of thirty feet at Portneuf, the Salmon falls of forty-five feet, 200 miles below, and the Chuttes of twelve feet, near the Dalles. This river grade is then as rapid as the descent to be accomplished will admit of; for, distributed into long levels and steep grades, it would immensely impair the utility of the whole work, and fatally impede transportation.

The great Colorado runs diagonally across the TABLE LANDS, *debouching* into the Gulf of California; but has its course and those of its great affluents, parallel with the mountain ranges, which are scored with unfathomed canons, perplexing the traveller with an infinity of impassable ridges, amongst which the watercourses are embowelled. Here is that immense and complex labyrinth of mountain ribs, whose great height and arid character have defied every effort to explore or penetrate. Its impenetrability cannot be made to yield to art, owing to the whole space from the Sierra Madre to the Pacific, bristling with parallel ribs of snowy mountains. The rivers penetrate these diagonally, and are sunk in canons, burrowed deep into their

roots. North of the South Pass, however, exist many single passes where the higher branches of the Missouri and Columbia interlock. These circuitous routes have all the same termini as that of the South Pass, for they also descend the same two rivers to the seas.

Thus between the South Pass and the Isthmus of Tehuantepec there exists no railroad route, owing to the longitudinal courses of the rivers, the complexity of the basins, and the double barrier of primary mountain chains. To the north, other passes exist, which future generations may develop, and on which navigation may be used for four-fifths of the whole distance.

True it is that potential fashion now exalts the little maritime basin of California, San Francisco Bay, into the haven of hope and fortune of the new seaboard, whilst the sublime basin of the Columbia and its magnificent *river harbors* are banished from public favor. The basin of San Francisco is small, tropical in climate, sterile, and the most isolated spot, to reach from the interior, on the whole coast of the Pacific. No great river gives it access to the Mississippi Valley, from which it is cut off by the basins of the Salt Lake, the Colorado, and the Del Norte, overlapping each other.

The Columbia is larger than the Danube, and equal to the Ganges. In size, climate, agricultural excellence, capacity for population, and its wonderful circular configuration, the basin of the Columbia surpasses both of these others. The mouth of the Columbia, a salient point upon the open coast, more than any other central and convenient to the whole North Pacific and Asia, is, in size, depth of water, safety, and facility of ingress or egress, equal to San Francisco. As the mouth of the greatest river descending from our continent into the Pacific, it is infinitely before it. It is eight degrees south of Liverpool, having the climate of Bordeaux, Marseilles, or Savannah.

Why is not the deep sea navigation concentrated at Norfolk, on Hampton Roads, the finest harbor of the whole Atlantic? Why, rather, is it found at New York and New Orleans, accessible only through every danger that can menace shipping? Why, because the former is the outlet of the basin of the St. Lawrence, the latter of the Mississippi. The shipping of commerce goes to where cargoes can be found.

Less than fifty years ago, *fashion* pronounced the little ravines of James' river and the Connecticut the proud spots of America, and held the great uninhabitable wastes of the Mississippi and its *unnavigated* streams as worthy only to balance *codfish*! This same splenetic spirit of *fashion* now manufactures a similarly ridiculous misdirection for the energy of the pioneers, by setting up what the geologist would call a "pot-hole of the Andes," against the grand Columbia. Commerce, provident like every other department of industry, makes herself harbors with charts, pilots, buoys, and beacons. The shallowest channel of the Columbia has thirty-five feet of water—the deepest of New York twenty-nine.

Thus does NATURE, piously appealed to, and calmly consulted, exhaust, bring to a close and settle, by eternal *facts*, the various *opinions* which perplex the public mind in locating the *continental railroad*. The national will must wisely listen to and obey her promptings. Postponement, defeat, and failure will overwhelm every effort to depart from the water-grade, or to penetrate, perforate or surmount in any other way the Titanic rigidity of the table lands. The obstinate advocacy of any other route is insidious and hostile in the lump to the work entirely. The *water-grade of the continent* is simply this:—The road leaving the west bank of the Missouri, pursues the Platte river along the facile ascent of its south bank to the South Pass; this is

some 750 miles: thence along the smooth *level* of the South Pass, 250 miles to Snake river: thence down the facile descent of Snake river to the Columbia, 900 miles. This route is the *shortest* and best across America; it is, in practical fact, a *level* from end to end; the grading is complete throughout; the mountains are all tunnelled; the climate dry and propitious.

There remains to be described the peculiarities of climate, and the bearing upon our subject of the immense interests of *ocean* commerce and political power.

CHAPTER III.

GEOGRAPHICAL MEMORANDA ON THE PACIFIC RAILROAD.—

Continued.

IN two former chapters I have endeavored to grasp the geographical view of the CONTINENTAL RAILWAY—to winnow its immense complexity, to shake loose a few simple *facts* engorged in obscurity, and to stand face to face and in council with Nature. We have seen that *nature*, thus candidly appealed to, leads us point blank to the supreme pass of the continent, the SOUTH PASS, and thence traces with her unerring finger to the right, and to the left, the double water-grade to the seas—by the Platte to the Atlantic, by the Snake river to the Pacific.

But public opinion is perplexed by a systematic obscuration of *facts*, long and vehemently repeated, in other things besides geography. This route is pronounced *northern*; the *climate* hostile; accumulated snows are insisted upon; the Indians impracticable; the work itself herculean; population, provisions, material to build, and work for the road wanting; the length of

the road is pronounced insuperable, and its cost enormous. These objections all fall absolutely before a few *facts* of nature, here eminently clear and emphatic. Let us appeal to them and decide!

CLIMATE.—Climate controls the migrations of the human race, which have steadily adhered to an "*isothermal zodiac*," or belt of equal warmth, around the world. The extremely mild temperature of our *western* seaboard is the consequence of the same great laws of nature which operate in Western Europe. These are the regular and fixed ordinances of the code of nature, to which the migrations of man, in common with the animals, yield an instinctive obedience. Within the torrid zone of the globe, from the equator to the twenty-eighth degree of north latitude, blow the *trade winds* and *variables*, always *from* the east and north-east, all round the world. But in the succeeding belt from 28° to 60°, the winds have an opposite or compensating direction, *from* the west and south-west, all round the globe.

These winds reach the *western* coasts of America and Europe after traversing the expanse of the Pacific and Atlantic oceans. Warmed to the temperature of these oceans, they *impart* again this same mild atmosphere to the maritime fronts of the continents which receive them. These same winds, passing onward over great extensions of continent of low temperature, covered with snow or frozen during winter; often warped upwards by mountain ranges, becoming exhausted of their warmth, have, upon the *eastern* expansions of the continents, an exactly opposite effect upon the climate. Hence the variant temperature of New York, and Lisbon, in Portugal, which face one another, on opposite sides of the Atlantic—of San Francisco, and Pekin, in China, similarly opposite upon the Pacific. At San Francisco and at Lisbon, the seasons are but modulations of one continuous summer. At New York and at Pekin, winter annually suspends

vegetation during seven months, whilst ice and snow bind up the land and waters. These four cities are all close upon the same parallel of latitude, the *fortieth* degree north.

Thus is it manifest why in Asia the mass of population is congregated on and south of the fortieth degree, and in Europe north of it. In America it again curves to the south on the eastern face of our continent, to rise northward again on the warm Pacific coast. Within this undulating belt of the north temperate zone, in breadth about thirty-three degrees, is included four-fifths of all the land and nine-tenths of the world's population. Here has been the progressive march of the human race round the world, commencing in the farthest orient, and forming a zodiac of nations towards the setting sun. In this have been retained similar tastes, similar industrial pursuits, similar food and clothing, requiring similarity of climate, and recoiling alike from the torrid and from the arctic zones.

If then, the mind retains the simple facts, that all our present territory between the oceans lies within this zone, where the winds flow always *from* the west, we arrive at the solution, as well of the different modifications of climate along the same parallel of latitude, as of the variety in the vegetable covering of the surface. Why the eastern portion is clothed with dense forests, the central portion with prairie grasses only; and why the great fertile plains of the high mountains and of the *Table-Land* are yet of an arid hardness and naked of all vegetation.

The amount of irrigating rains falling upon the face of the land from the clouds, regulates this. The oceans are the reservoirs which supply clouds to the atmosphere. The vapors, rising from the whole surface of the ocean into the higher regions of the atmosphere, form themselves, at a cold elevation, into natural balloons or clouds. These, carried by currents of air over the land, and rising still higher, become condensed and distil them-

selves upon the earth in the form of rain. Those holding vapor in the form least concentrated, spill it out in the regions near the sea. Others attain to a high degree of concentration, retaining the form of clouds until they reach the central regions of the continents and a great elevation.

But we have seen that the great *snowy* Cordillera of the Andes lines the whole *western* seaboard of North America, being in sight of vessels sailing up the sea, from the Gulf of California to Bhering's Strait. The winds coming from the west and over the ocean, blow against this wall. On this elevated summit of perpetual congelation, water becomes ice, as solid and permanent as the cold lava-rock. The irrigating influence of the Pacific ocean is here abruptly stopped and entirely ceases.

The great *eastern* slope of the continents, however, descending by gentle inclined planes to all the seas, receives, without any geographical interruption, the irrigating winds and clouds of the ocean. The barrier of the Alleghanies diminishes, but does not stop the inflowing of vapors. But we have seen that the winds blow perpetually *from the west*. The inward progress, then, of the atmospheric vapors is by this continually repelled. The vegetation of the continent itself reveals to us the result of this conflict between winds and the gradual exhaustion of the atmospheric vapors, with an exactness as complete as that with which the thermometer indicates temperature. The maritime declivity, the Alleghanies, and the countries between the latter and the *troughs* of the Mississippi and St. Lawrence, are densely clad with timber. So are the states of Louisiana, Arkansas, and *South* Missouri, receiving clouds from the Gulf partly, and partly from the Atlantic. Westward and northward the timber gradually tapers away, still following in narrow lines along the rivers, but leaving the uplands and ridges to the luxuriant prairie grasses. Soon, however, the timber abandons its struggle to grow, and

ceases entirely. Onward, however, from the last fringe of timber, for some hundred miles, the irrigation continues to preserve the mellowness of the soil, and a sward of tall, luxuriant grasses covers the whole smooth expanse of nature. This, in turn, gradually dwarfs under the decreasing irrigation, tapering into the delicate curled grass of the buffalo plains, which is scarce half an inch in height, and resembles the wool of a lamb. Finally, grass itself fails, and the general characteristic of the surface of the great Sierra Madre and the plateau of the table lands is total nakedness of any nutritious vegetable covering. The soil is either compactly hard, or resembles dry ashes. The surface is here sparsely clothed with dwarfed wormwood and the prickly pear, funereal plants, which seem as careless of moisture as is the salamander of fire.

Such are the great primary laws of nature which decide the climate and vegetation of our continent. Interruptions and modifications of these laws are innumerable. Nature is everywhere wise. Compensations exist in all these countries, so eccentrically novel to us, which will win for them the densest populations. No deserts of silicious sand, like those of Arabia and Africa, exist in America, nor are such possible. The only formation of silicious sand is the Atlantic declivity, whose soil soon wastes under culture, and the ocean washes *this*. The great bowl made up of the basins of the interior is everywhere *calcareous*. The soil which covers the two great Cordilleras, the TABLE LANDS and the Pacific declivity, is the intrinsically fertile decay of basaltic and lava formations. Thirst alone causes its nakedness and apparent aridity. Where this thirst is quenched with a frugal supply of water, it shows an abundant and inexhaustible fertility. Great rivers are everywhere full and convenient.

Thus are all the successive varieties of climate, vegetation, and soil explained by the gradual attenuation of the rains, as we

recede from the ocean. *Vice versa*, these conditions of the atmosphere and land attest the absence of vapor in the former. All secondary phenomena, such as the annual fires of the great prairies of long grass, are consequences of the aridity of the autumnal and winter atmosphere, and not *causes* of the absence of timber.

Again, the elevation of the plain of the *South Pass* is 7800 feet above the sea. The streams which collect and carry off its waters—Sweet-water to the east and Sandy to the west—are only large rivulets, though their courses are long. The amount of rain in summer and *snow in winter* upon the water-grade of the Platte and Snake rivers, and in the South Pass between them, is so insignificant as to bear no comparison in amount with those between Boston and Buffalo!

But the stupendous masses of the Wind River Mountains rise in the northern horizon of the South Pass to an altitude of 14,000 feet. Their great elevation draws down the vapors left in the atmosphere, which clothe their summits with perpetual, and their flanks with winter snows. These supply waters to the great rivers, and cover the flanks and gorges of the great mountains with immense forests. The same is the case elsewhere with the great primary mountain-chains, such as the Utah or Wasatch, and the Salmon River Mountains; but the secondary mountains and passes are entirely naked of timber, having upon them neither rains nor snows at any season.

But an extraordinary *fact* here develops itself. If from the point where the junction of several small streams forms the Kansas river, 120 miles due west from Independence, as a centre, a circle be described touching the boundary line of forty-nine degrees as a tangent, the opposite side of the circle will pass through the mouth of Matagorda in Texas; through New Orleans and Mobile. This point is, therefore, the *centre* north and south of our coun-

try. If from the same centre a larger circle be described, it will pass through San Francisco, and through Vancouver City, on the Columbia, exactly grazing the whole coast between them. The same circle will pass through Quebec and Boston on the Atlantic, through Havana on the gulf, and through the city of Mexico. The same point is then the *centre* between the oceans.

Thus, at the forks of the Kansas river a point exists, in latitude $38^{\circ} 45'$, and longitude 97° west of Greenwich, which is the GEOGRAPHICAL CENTRE, north and south, east and west, at once of our whole national territory, of our Union, and of the Valley of the Mississippi!

The *facts* then which concentrate themselves to locate the *Continental Railway*, as the line of water-grades from ocean to ocean, sum themselves up conclusively in its favor and against all others:

From Baltimore and New York, through St. Louis to Kansas, this road is now under contract and construction. For this distance the route traverses a country guttered with rivers; interrupted by the narrow and abrupt ribs of the Alleghany chain; covered with timber; having a fitful climate vexed with immense rains and snows; the surface infinitely channelled with water-courses and perplexed with innumerable ravines, alternating with steep and narrow hills. Yet this half of the whole road progresses over all these difficulties with such ease and celerity, that argument of its impracticability is not tolerated. But against the remaining half of the road, from Kansas to Astoria, these arguments are tolerated, though in truth they have all ceased, and such obstructions and impediments have no existence in nature.

The remaining half from Kansas to Astoria crosses no river of any magnitude, yet pursues the banks of great rivers continuously the whole distance. The banks of these rivers, rising but

a few feet above the water surface, are of immense width, perfectly hard and dry, and smooth as a water level. Such is the general characteristic of the Platte and Columbia from end to end. The plain of the *South Pass* is almost as smooth and hard as a marble pavement, and is of a general breadth exceeding thirty miles. Not a single eminence exists in the whole distance but is tunnelled by these rivers down to the general grade. On the track everywhere is material in every variety of form, and in the sublimest abundance. Lumber exists in abundance in the high mountains to the right and left; iron can be supplied at the ends and upon the navigable rivers, brought from Europe if necessary as it now comes for nearly all the railroads in America. Mineral coal is abundant from end to end. Rock in every variety—granite, basalt, lava, limestone, and gypsum. The Platte perforates a great range of mountains of *gypsum*. The Snake river a less one of *rock-salt*.

This route is not *northern*, but *exactly central*. The sublime order and fitness of nature seems here pre-eminently to vindicate and exemplify itself. Upon the Kansas river it plumbs the geographical centre of the national territory. From hence it curves northward to Baltimore, the most *southern* Atlantic city of great commercial activity. It curves gently to the northward to the mouth of the Columbia. This is in latitude $46^{\circ} 19'$, being three degrees south of Havre in France, and eight degrees south of Liverpool and Amsterdam. Yet the climate of Western America is milder than that of Western Europe. It is also upon the coasts extending fifteen degrees north of the Columbia, that the marine of the Pacific will be constructed, as here are combined the conveniences of sea-harbors and forests. It is in the Baltic and British Isles that all the marine of Europe is built and owned. It is likewise on the St. Lawrence and in New England that the marine of America is constructed and owned.

To speak of the obstruction of *Indians* upon the route is a monstrous *burlesque*. The whole aggregate number of men, women, and children, within several hundred miles along the flanks of this route, does not amount to *nine thousand*, or one-fifth of the population of Washington City! The most moderate pay would make of them valuable herders of stock and hunters. The pastures now maintain meat upon the hoof, or buffalo, to the amount of many millions. An hundred millions of tame cattle will maintain themselves in the buffalo country, fat in condition round the year. Beef is the appropriate food of these dry and high altitudes.

The eastern half of this route, from Baltimore to Kansas, traverses very centrally the densest population, the largest production and consumption, and consequently the line of greatest travel and commerce. The same will be the case with the *western* half so soon as the *burlesque* of "Indian occupation" is brushed out of the way. The immense mass of pioneers in all the elder States, chafes to issue out and cover this delightful country with republics.

The country embracing the sources of the Sweetwater, Colorado, and Snake rivers, is a gold country, equalling California or Brazil, but inaccessible to ocean navigation. The climate does not, as in these latter countries, pulverize and disintegrate the rock. The gold is in a matrix of quartz. The hard porphyry and lava will descend in immense quantities and thus economize the paving of the cities of the Valley of the Mississippi. One natural production of the eastern edge of the TABLE LANDS will soon repay the cost of the construction of this road. This is SALT. There are mountains near the sources of Snake river, composed of stratified masses of *rock-salt*—just as our river bluffs are of limestone. This, quarried with light tools, and ground to powder, as grain is reduced to flour, is the pure alum

salt of commerce. Every living soul of America uses salt thrice per day. Every animal requires it as frequently. Every ounce of provisions is preserved with it. It is mixed with hay and preserves timber. It is used in the manufactures and fine arts. Brought hence down to the focal point of navigation in Missouri, this State will become the distributing point of this most valuable, greatest, and most indispensable article of commerce.

By the last national census, the annual production of our country reaches the value of *three thousand millions* of dollars. Seventy-five per cent. of this is *food*, which finds no market among the comparatively limited population of Europe, 205,000,000, who feed themselves. Around the Pacific, in front of Astoria, are 745,000,000 of hungry Asiatics and Polynesians, who have groceries, clothing, spices, and porcelain, to exchange for meat and grain. But the western half of this road departs from the bank of the Missouri, to which all America has access at this hour by the navigable rivers—and from Astoria these millions of consumers may be reached directly, over a tranquil ocean and under a *temperate* atmosphere: the equatorial heats are only encountered last and at the place of final delivery. No doubt, in the populous, central, food-producing states of Iowa, Missouri, Arkansas, and Illinois, *three hundred millions* of dollars' worth of produce of industry, fail annually to find a market, and the profit thereon perishes for want of this road *out* from the centre to the *north-western* coast!

But it is important that the *people* receive with candor, and allow due weight to the overwhelming and conclusive proofs in favor of this route of the water-grades, which Nature, all recorded human experience, and the solid *science* of civil engineering, conspire to submit to their judgment. *Nature* is the supreme engineer; *art* is prosperous only whilst adhering to her teachings. We have seen in what a simple and sublime harmony the invisible

force of nature elevates vapors from the sea, forms them into cloud balloons in the upper atmosphere, and *transports* them on currents of air over the continents: how these become condensed and distil themselves over the face of the land in the form of irrigating rains. This water, having performed its renovating duty, by filtering through the surface soil, begins again to collect, first in remote hollows and undulations; these unite into rivulets; rivulets into larger streams; streams into rivers; rivers into the great fresh water *troughs*, which return this drainage from the land, to mix with the salt of the ocean, to be renovated and perform again their part in the *circulation* of nature. Now the use of public works to human society, is the same as are her works to nature; to bring *in* and distribute clothing and groceries; to collect and carry *out* surplus food and productions of every variety. In the transferring to and fro of the waters of the universe, nature accomplishes as much heavy transportation in a few hours, as will suffice the social wants of America for a century. This, then, is all that is *sound* in civil engineering, and comprehends all the good that it *has*, and *can* do, for human society:—to select those water-grades where, in further imitation of nature, human energy may smooth the asperities and economically adapt to use the curves and grades with which she has everywhere furnished the face of the land.

Thus, then, to recapitulate and sum up the array of facts which concentrate themselves to decide the *location* of the CONTINENTAL RAILWAY. Nature and all sound human experience unite to select the *water-grade* of the Platte and Snake rivers, and against any departure from it. If this route deflects at all from an exact *centrality*, it is to the *south*, and not towards the north, that it bears. Its two halves diverging from the centre, give the *shortest* lines to the sea, through the countries and populations where the work to be done is the greatest, and the necessity for

it, most immediate, pressing, and lasting. One-half is located and under construction. As a *through* road it is the *shortest* line across North America, most conveniently connecting Asia and Europe. Though meandering *among* immense mountain chains, it passes them all by tunnels completely made by nature. Neither snow nor rain, nor great rivers, embarrass either its construction or its after-use: the climate is pre-eminently propitious; material to construct is conveniently at hand, at easy intervals on the right and left; fuel and water abundant for ever; the *pastoral* excellence of the whole region, combined with a dry atmosphere and health, supplying meat-food and transportation indefinitely, will render easy the immediate influx and residence of an immense population. The vicinity where the great Sierra Madre is penetrated, and where *five* great rivers have their sources together, is prodigiously prolific in salt, hard rock for architecture and paving, medicinal hot springs, all the precious metals and jewels, furs, lumber, and the hides of animals.

If I have delineated with any success, and explained correctly the features of *nature*, in geography, climate, and topography, there remains to examine the bearing upon this work of the combined hostile influence of ocean commerce allied with politics. Why this great central route, successfully opened in the time of Jefferson and by the energy of Astor, was attacked, stopped, and finally *shut up*, under President Monroe, and its reopening still hampered and postponed by the same remorseless and relentless enemies!

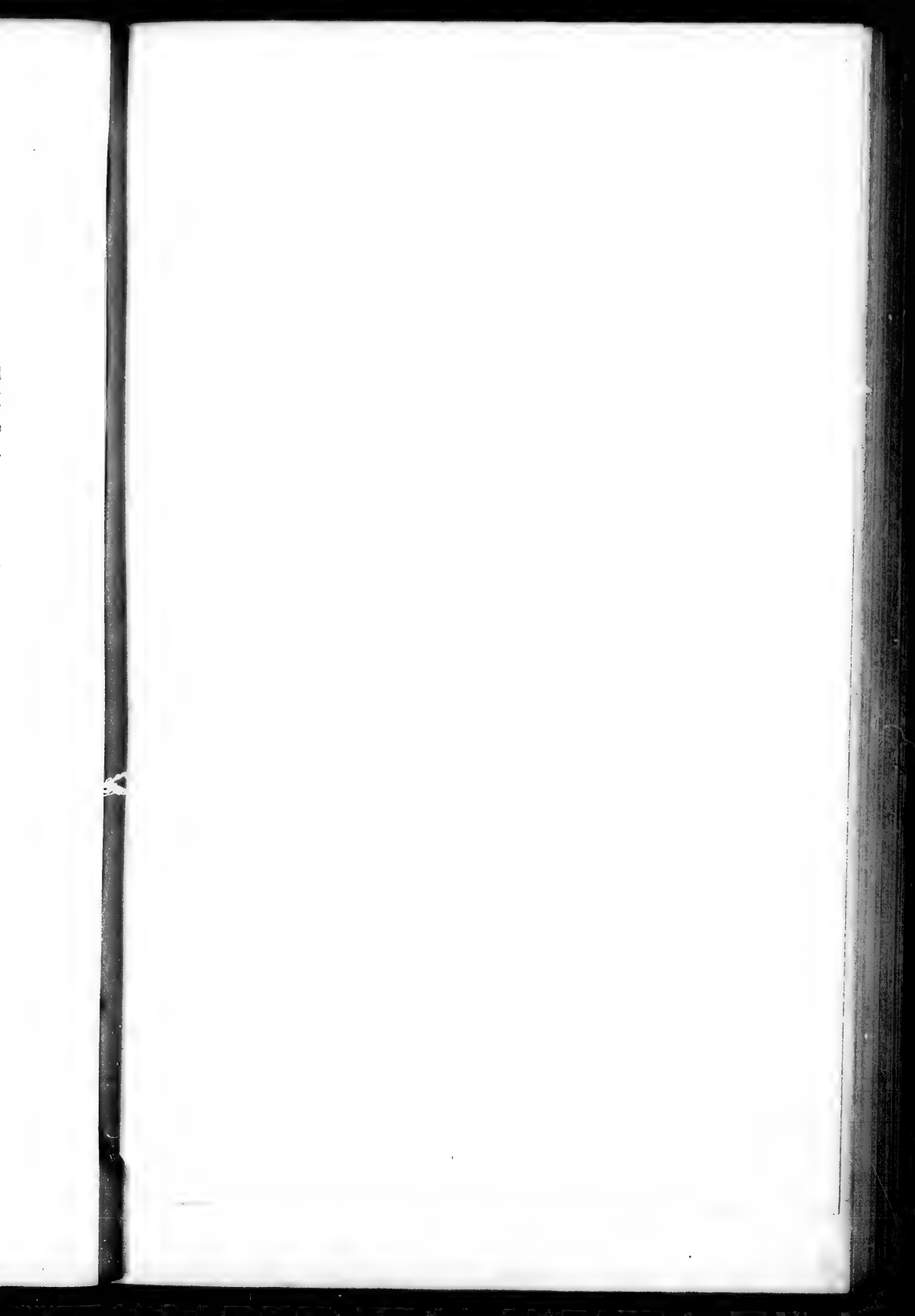
CHAPTER IV.

THE MOUNTAIN FORMATION OF NORTH AMERICA—THE
GREAT TABLE-LANDS—GEOGRAPHICAL FEATURES.

I HAVE elsewhere given you a sketch of one of the cardinal subdivisions of our continent and country, the GREAT PLAINS. I now proceed to sketch what is beyond them, and fills the space out to the Pacific Sea. This is the immense MOUNTAIN FORMATION OF NORTH AMERICA.

I approach the attempt to classify and set down this region with a degree of trepidation, which I find it difficult to master. During the years of war and exploration which I have passed among them, every hour has kept alive the awe inspired by the immensity of the space they occupy, the grandeur of their bulk and altitude, and the sublime order and symmetry which pervades them as a system, and in the details. Moreover, no one, not even HUMBOLDT, has ever attempted to reduce them to a classic system, or assented to what I have done in the Hydrographic Map of 1845, which you have seen and studied. These indelibly-graved impressions perpetually recur whenever my memory reverts to that time, and warns me to speak of countries so novel to a public little curious and uninformed, only after condensing their portrait with the maturest meditation and with nicely-guarded caution.

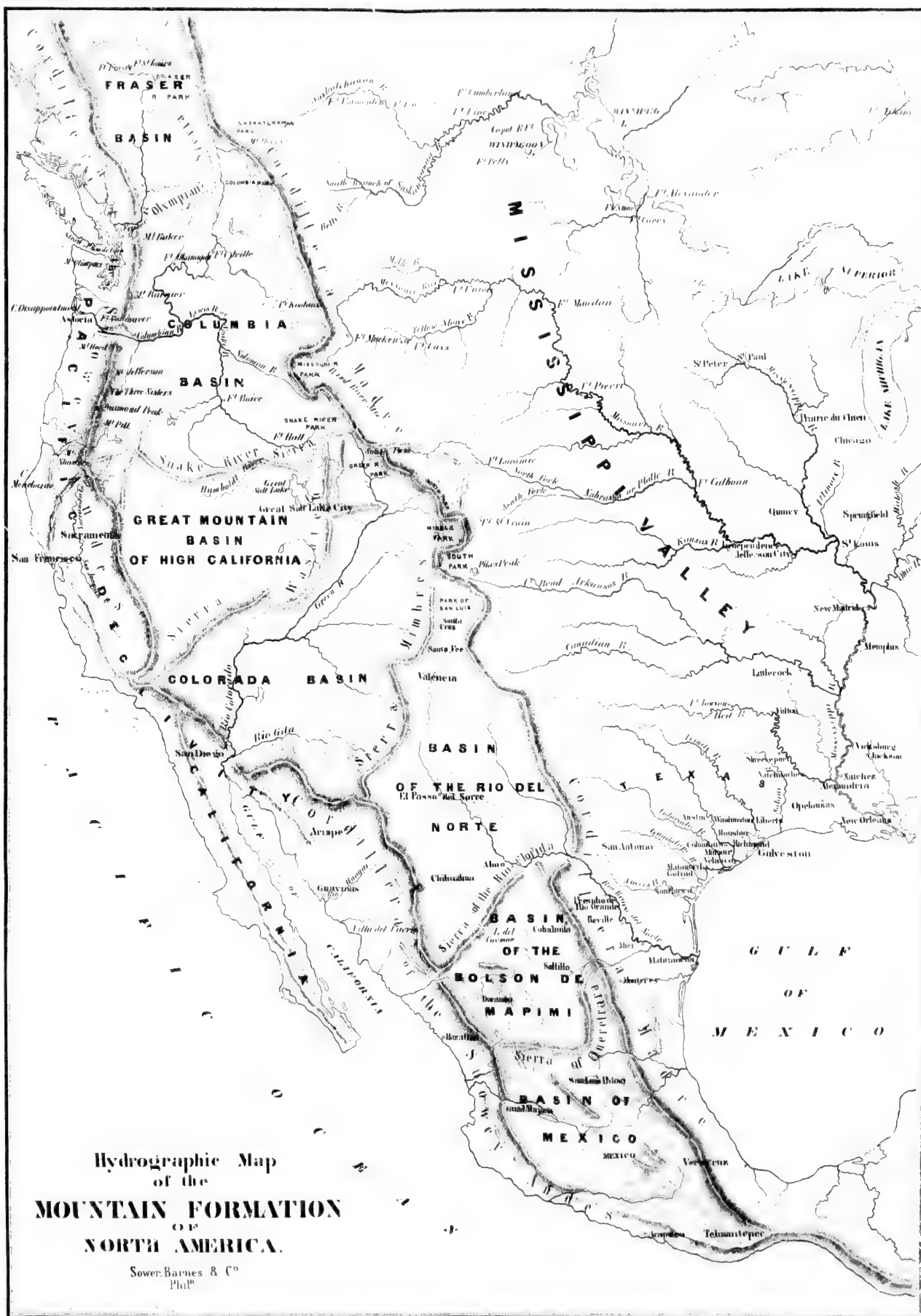
The mountain formation of North America is that distinct subdivision of its area which occupies the whole space from the Great Plains to the Pacific Sea, and covers two-sevenths of the continent. In its superficial contents, bulk, number and variety of the mountain masses, it equals the aggregated mountains of all the other continents. It has peculiar characteristics, which render it more





interesting than them all. Travelling transversely across from east to west along the thirty-ninth degree, the breadth is 1600 miles; the length, continuous from Tehuantepec to the Arctic Sea, is 4500 miles; the direction is regular from south-south-east to north-north-west. From east to west the traveller enters and crosses five physical divisions, as distinct in order and succession as are the prismatic streaks of the rainbow to the eye. These are: 1st. The Black Hills, or Eastern Piedmont; 2d. The Cordillera of the Sierra Madre (Rocky Mountain); 3d. The Plateau of the Table-Lands, with its mountain chains; 4th. The Cordillera of the Snowy Andes (the Sierra Nevada); 5th. The Maritime Piedmont, of the Pacific Shore. These divisions are parallel to one another like the streaks of the rainbow, and, like them, run throughout from end to end of the *mountain formation*, in which they are blended together in one embodied mass.

Beyond the central line of the Great Plains, the undulations of the surface begin to swell up, until they become elevated into secondary mountains, with timber, and crowned with rocky escarpments. These are the **BLACK HILLS**. They are the outliers of the Sierra Madre, are in the Basin of the Mississippi, and, masking the mountain crest, break and graduate its descent. They are 300 miles in breadth, are perforated across by all the great rivers, and are washed away and tortured into fragments by their channels. They have rocks of porphyritic granite and sandstone, but are for the most part formed of the sulphate of lime, as gypsum or plaster of Paris. Some of them are paved with petrifications, and others, being composed of light mould, form the suspended matter of the rivers, which goes down to make the alluvial bottoms and delta of the Mississippi Basin. They have but little snow or rain, a scattered growth of dwarfed timber, and a picturesque and fantastic scenery. They are an important part of the pastoral region, are clothed in perennial



grass, and abound in aboriginal cattle. Perpetual sunshine, fertility, perfect health, pure and abundant water, ever-varying scenery, and infinite animal life, will, in time, attract and fix here the densest population.

Over the Black Hills rises the CORDILLERA OF THE SIERRA MADRE. This supreme Cordillera may be defined as the backbone of the world; it is the "divostia aquarum" of the American continent. From the snows of its immense crest and flanks descend the rivers that irrigate either face of the continent out to all the oceans. From it also branch off all the other mountain chains. Where the irrigation from the snows is sufficient, immense forests exist; elsewhere the mountains are naked. The core or basis of the Sierra Madre is red porphyritic granite, from the immense naked masses of which comes the popular sobriquet of "Rocky Mountains." This is the gold-producing quartz. The Sierra Madre has precipitous mural flanks, which protrude outward as promontories, or recede to encase the courses of rivers and valleys. It has peaks, conical in shape and culminating by a sharp apex. To those who view it in the horizon from below, this is its general appearance; but to those who ascend its ragged front and surmount its highest crest, this is found to be a *Mesa* or indefinite table-land as level as a water surface. This Sierra Madre has its own characteristics, which are all of the grandest order. I am unable to illustrate it by comparison, because it stands supreme and alone, the standard to which all other mountain masses must be submitted. It is of the original mass of the globe, and has neither lava, nor craters, nor active volcanoes, nor traces of the igneous force within. It is *par excellence* primeval. Scooped out of its main mass are valleys of great size and beauty, which have received from the trappers the name of *Parcs*. These occur at regular intervals, alternately upon either flank, and mark the sources of the great rivers. Those which I have seen

are the Plain of the South Pass, surrounding the sources of the Rio Verde; the North Parc upon the Northern Platte or Nebraska river; the Middle Parc upon the Rio Grande of the West; the South Parc upon the Southern Platte; the Plain of St. Louis upon the Rio del Norte. These remarkable valleys are all secluded within the main dorsal mass of the Cordillera, and are of great size, fertility, and beauty. They resemble those reservoirs of the Alpine torrents of Switzerland, Geneva, and Constance, out of which issue the rivers Rhone and Rhine, and the valley of Kashmere, through which the Indus flows, though they contain no lakes. They are the paradise of the aboriginal herds, with which they swarm at all seasons, and are the favorite retreats of the Indians. To define the exact width of the primary Cordillera, and mark the line where it fades into the Black Hills upon the east, and into the plateau of the table-lands upon the west, is not easy; but it varies from 100 to 250 miles, according as it expands into salient promontories, or recedes to give passage to the rivers.

We next descend on to the third division, which is the PLATEAU OF THE TABLE LANDS. This expands onward to the Cordillera of the Snowy Andes. I speak again with great diffidence, but of all the departments into which science has arranged the physical geography of the globe, this appears to me the most interesting, the most crowded with various and attractive features, and the most certainly destined eventually to contain the most enlightened and powerful empire of the world. At present it is no more known or comprehended, *as it is*, by the American people than was America itself to the poet Homer, and is to them as much a myth as the continent of Atalanta. Nevertheless it is of such great area as to contain within itself three rivers which rank with the Ganges and Danube in size, and five great ranges of primary mountains. You will see it exactly defined upon the

hydrographic map of 1845, as the immense longitudinal region, encased within the Cordilleras and extending from Tehuantepec to the Northern Sea. It would exhaust a large volume to recite in detail the interesting features of this region, all worthy to be known.

The PLATEAU OF THE TABLE LANDS is a succession of *intra-montane* basins, seven in number, and ranging successively from south to north. The solid mass of the Andes debouches out of the Isthmus of Tehuantepec, and forks immediately into the two Cordilleras. Advancing along the Western Cordillera into the state of Jalisco, a mountain chain issues from its inner flank, and, traversing the Table Lands, plunges into the Sierra Madre, in the state of San Luis Potosi. This cuts off to the south the "Basin of the city of Mexico," which is the *first*, the smallest, and most southern of the mountain basins. Further north, a second mountain chain crosses from Durango to Coahuila, and cuts off the "Basin of the Bolson di Mapimi." This is the *second* mountain basin. The Cordilleras, which flank these two and fence them from the sea, have so great an altitude that the ocean vapors never surmount their crests, nor do any clouds pass outward over them. These basins, therefore, have no outward drainage, nor any rivers running to the sea. Stagnant lakes alternately receive the drainage from their surrounding mountains, and yield it to them again by evaporation. This last chain is known as the "Mountain of the Rio Florida;" the former as the "Mountain of Queretaro."

Pursuing still the Western Cordillera through the state of Sinaloa, a third mountain chain, dividing off, traverses the Table Lands due north, and plunges into the Sierra Madre, between the plain of St. Louis and the Middle Parc. This is an immense and remarkable mountain, is 1300 miles in length, and divides asunder the waters of the Del Norte and Colorado. It is the famous Sierra Mimbres. The area thus cut off between it and

the mountain of the Rio Florida is drained by the rivers Del Norte, Pecos, and Conchos, which, uniting at the base of the Sierra Madre, perforate it by a *cañon*, and escaping into the external maritime region, form the Rio Grande of Texas. This is the only water-course which perforates the Sierra Madre between Cape Horn and the Arctic Sea. It is here that a profound and distressing error pervades all the existing charts and delineations of our continental geography. These, omitting the great Sierra Madre for 600 or 700 miles of its length, and assigning its name to the Sierra Mimbres, locate the Rio del Norte and its vast basin with the system of Atlantic rivers. Yet the Sierra Mimbres abounds in pedrigals of lava, craters, and volcanic phenomena, and the geological altitude, configuration, and a thousand palpable characteristic features of the basin of the Del Norte, locate them upon the Plateau of the Table Lands. This blunder of transposition is more foolish than to construct a map of Europe and forget the Alps, or to draw for the people a pine tree growing erect in the middle of the ocean, whilst dolphins graze upon a mountain slope! The vast basin of the Del Norte is then the *third* in order of the mountain basins of the Plateau.

The Western Cordillera continues to traverse Sonora, and, passing round the Gulf of California, reappears in sight of the ocean in the state of California. Opposite San Bernardo another mountain chain branches from its eastern flank, traverses the Table Lands by a northern course, dividing the waters of the Colorado and Great Salt Lake, and plunges into the Sierra Madre between the sources of Green river and Snake river. This is the *fourth* great mountain chain of the Table Lands, is 1000 miles in length, and is the SIERRA WASATCH. Between it and the Sierra Mimbres is included the immense MOUNTAIN BASIN OF THE COLORADO, which is the *fourth* subdivision of the area of the Table Lands. This basin has an immense area, great altitude, an

infinite perplexity of mountains, and is redundant in striking and wonderful novelties. The Rio Verde, Rio Grande of the West, the Rio San Juan, collect its upper waters, and, uniting against the inner flank of the Cordillera of the Snowy Andes, gorge it diagonally through and through, and escape into the Gulf of California. This sublime gorge is 400 miles in length, and is known as the "Cañon of the Colorado." It is throughout a narrow mountain chasm, traversing, without interruption, the very bowels of the Andes, having perpendicular mural sides, often many thousand feet in altitude. Other important affluents of the Colorado (the Mohave, the Little Colorado, and the Gila), force their way into it by an infinite labyrinth of gorges, similarly scooped through the bowels of the mountain mass. These two remarkable basins then—the Del Norte and Colorado—lie against the Sierra Mimbres, as a backbone. The waters of the first gorge the Sierra Madre to the Gulf of Mexico; those of the second, the Andes, to the Gulf of California; but no gorge unites them through the Sierra Mimbres, which is unperforated. These basins are both longitudinal in shape and position; they overlap one another, and thereby multiply the number and complexity of mountain barriers. Among the physical phenomena of the globe, this "Cañon of the Colorado" is an isolated fact, unique and sublime in interest. These two basins are, *par excellence*, the metalliferous department of the world, and are *infused* throughout with *mountains* of the precious stones, and precious and base metals—of lava, obsidian, and marble—of salt, coal, and with rivers of thermal and medicinal waters.

Let me hasten to other subdivisions of equal interest. Near the forty-second degree of latitude, the Western Cordillera throws off the *fifth* mountain chain of the Table Lands. This has a serpentine course, mainly east and west, is 1200 miles long, and forms the division between the basin of the Salt Lake and the

basin of the Columbia. It joins with the Sierra Wasatch, and immediately at the point of junction, plunges with it into the Sierra Madre. The great basin, containing in one of its depressions the Salt Lake, is the counterpart, on our continent, of the Caspian of Asia. It is, like the first and second basins, encased all around with an unperforated mountain wall, and neither sends nor receives water from any sea. Nearly opposite to Puget's Sound, a sixth chain of mountains, breaking off from the eastern flank of the Western Cordillera, traverses the Table Lands by a due northern course, and sinks into the Sierra Madre, closely enveloping the sources of the Columbia river. This is called the OKENNAGAN MOUNTAINS, and divides the waters of the Columbia from those of Frazer's river.

The BASIN OF THE COLUMBIA is the *sixth* in order of the basins of the Table Lands. It is the most admirable of them all. A splendid circular configuration and two primary rivers. Its size, position, and configuration, relatively to the Mississippi Valley and the Pacific Ocean, make it the *élite* of them all. It extends all across the Table Lands from rim to rim, as do both its great rivers—the Snake river and the Columbia—which uniting, gorge the Andes at the Cascades, penetrating through them to the Pacific in $46^{\circ} 19'$. They run from east to west, and connect exactly by convenient and single passes across the Sierra Madre, with the great rivers flowing down to the Atlantic. It partakes of all the cardinal characteristics of the other basins, having, in addition, mighty forests, navigation, a larger share of arable qualities, and a superior economy in its topographical surface and position.

Such are the six primary basins and mountain chains which chequer and arrange themselves into the GRAND PLATEAU OF THE TABLE LANDS, as I have seen them and become familiar with them. There is a seventh, the basin of Frazer's river, with which I am acquainted only from the reports of others who have recon-

noitered it. It has the same general features, though smaller, longitudinal in direction, and narrow.

We may now, then, return to the third elementary division of the mountain formation of North America, namely: THE PLATEAU OF THE TABLE LANDS. We may understand its variety and vastness, yet handle it as a unit. The lowest sedimentary points, which the waters accumulate from the lakes of Mexico, Mappimi, Gusman, and Salt Lake, have an average altitude of 6000 feet above the seas. The whole Plateau has then the elevation of a primary mountain. It is everywhere fertile, being pastoral for the most part, but arable where irrigation is adopted. Every geological formation exists on a Titanic scale, volcanoes, columnar basalt and pedrigals of crystallized lava, porphyritic granite and sandstone, and secondary basins of the sulphate and carbonate of lime. It is universally a rainless region, and nowhere is arable agriculture possible without artificial irrigation. Pastoral culture is the prominent feature, wherein it rivals the Great Plains. The air is tonic and exhilarating—the atmosphere resplendent with perpetual sunshine by day and with stars by night. The climate is intensely dry, and the temperature variant and delicious. Habitations are not essential in this salubrious and vernal clime; the aborigines dispense with them. During three years that I have passed upon the Plateau, I have rarely slept within a house or beneath any canopy but the sky, infinitely spangled with stars. Upon this Plateau has existed, within our memory, the populous and civilized empire of the Aztecs, and in South America that of the Incas. Timber grows upon the rivers and upon the irrigated mountain flanks. To arrange the arable lands for irrigation is not more costly than our system of fencing, which it supersedes. No portion of the globe can maintain a denser population.

But the *fourth* subdivision of the "Mountain Formation of North America" is the SNOWY CORDILLERA OF THE ANDES.

Everybody is familiar, from childhood, with the South American ANDES. This of ours is the same, unchanged in any characteristic, except an increased and superior grandeur. Let us restore to it its ancient and illustrious *name*! Let us inquire how it has come temporarily to be lost! The ANDES traverse the American continent, in one unbroken and uniform mass, from Cape Horn to Bhering's Strait. Towards the ocean, to whose indented shore they are parallel, and from which they are everywhere visible, they present a precipitous front and immense altitude; they everywhere surmount the line of perpetual snow. Upon this front, which receives the perpetual winds from the ocean and is bathed with its vapors, snows and forests accumulate as upon the Alps. But on their summit of perpetual congelation, these vapors, condensed to ice, are as solid, as perpetual as the granite rocks. No vapors pass over to the *inner* region, which is naked of snow, timber, or irrigation. Hence has come this distinctive Spanish sobriquet of this sublime sea-wall—Cordillera *Nevada* de los Andes (the *snowy* chain of the Andes)—to define it specifically from the naked masses within! Thus, since this ancient and familiar ANDES has come to be domesticated in our empire, within the states of California and Oregon, has it been thoughtlessly plundered of its name, defined only by an expletive, *snowy*, and incontinently ignored of its supreme, coronated rank in the mountain system of the world.

If, then, you require from me a description of this *fourth* subdivision of our mountain formation, I bid you to peruse again the fascinating pages of PRESCOTT and his predecessors; the romantic historians of CORTEZ, ALVARADO, and PIZARRO; and, above all, the oracular inspiration with which the illustrious HUMBOLDT has analyzed the geographical wonders of this Cordillera of the Snowy Andes, and tinted them with divine eloquence!

Finally, I am bewildered how to speak of the *fifth* subdivision,

which is the PACIFIC MARITIME FRONT. This brings us out to meet the ocean, to blend together the varieties of sea and land, and where, among the assembled climates and countries of the globe, Cornucopia permanently dwells with her ever-redundant and overflowing horn of ripening beauty and plenty. This Pacific Maritime Front is the counterpart of that outside of the Alleghany and upon the Atlantic. It is the tide-water region. The Atlantic Front has an area of 271,000 square miles, this of 420,000; it is not much broader from the mountains to the sea, but has a greater longitude. In every detail of climate, vegetation, soil, and physical formation, there is between these two seabords the completest contrast. On the Pacific are blended, beneath the eye, and swept in at one sight, the sublime, castellated masses of the Andes—their bases are set in the emerald verdure of the plain, rising gently above the sea level—their middle flanks are clothed with the arborescent grandeur of pine and cedar forests. Naked above and towering into the upper air, their columnar form of structure resembles an edifice designed to enclose the whole globe itself; but from this foundation, and rearing their snow-covered crests another mile into the firmament, shoot up volcanic peaks at intervals of one hundred miles, incasing the throats of the inner world of fire, and coruscated in perpetual snow, beneath coronets of volcanic smoke and flames.

The sublimest of the oceans, majestic rivers more worthy to be deified than the Ganges or Egyptian Nile; the grandest and most elevated of earth's mountains; superlative forest evergreen; an emerald verdure and exuberant fertility; a mellow and delicious atmosphere, imbued with purple tints reflected from the ocean and the mountains; a soft vernal temperature the year round; whatsoever can be combined of massive and rugged mountains, picturesque landscape, and a verdant face to nature shining under the richest sunlight, a climate soft and serene; whatsoever

of all these, blended and enjoyed in combination, will accomplish to give grace, elevation, and refinement to the social world, are here united to woo and develop the genius of our country and our people.

In all these natural favors our western seaboard front is supremely more gifted than the classic shores of the Mediterranean and the Asian Seas, for fifty centuries the favorite theme of history, poetry, and song. The embellishments which old society and the accumulating contributions of a hundred successive generations add to nature, are not yet there; but these will come, and to us who fan the career of our great country whilst we live, the future, which posterity will possess and enjoy, is full of the radiance of true glory.

Such is a homespun and laconic detail of a few essential facts necessary to comprehend the "*Mountain Formation of North America*," and to know where and what it is. The subject is above the reach of imagination or ornament, and of a higher level. Intelligent and candid judgment must supply the rest and fill up the portrait.

CHAPTER V.

THE CORDILLERA OF THE SIERRA MADRE.

THIS is an immense department of our country, of primary significance and interest. Vaguely denominated as the "Stony or Rocky Mountains," occupying an inhospitable waste beyond the energies of social adventure, mankind has heretofore heard the name with indifference, and all minute details with dogmatic aversion. To establish its title to esteem in the popular opinion of the world, the complete reverse of this, is my object.

Prominent in the "Mountain System of the Globe" is an immense girdle of mountains, granitic in formation, crested with snow, having volcanoes on its flanks, and *auriferous* throughout. This commences at Cape Horn, traverses the whole length of America to Bhering's Strait, traverses Asia and Europe to the Pillars of Hercules, traverses Africa and appears in the islands of Madagascar, Australasia, and New Zealand. If the single strait of Hercules were closed, and Suez opened, this continuous mountain crest would exactly contain all the salt and fresh waters of the Pacific Ocean in a closed circle, and divide them from those of the Atlantic.

This continuous girdle becomes, in some localities, very much condensed in breadth and altitude, as at the Isthmus of Central America, and in France. Elsewhere it assumes immense expansion in area and altitude, spreading out and elevating itself into the continental plateau, which occupies the whole of Central Asia, and the still grander "Plateau of the Table Lands" of our North America. The "mountain formation of North America" is, then, an important section of this immense girdle, which bisects all the continents. It has an area, a massiveness and altitude, a position and climate, a fertility, a variety which blends all the peculiarities of all other sections, a simplicity of configuration, and a sublimity of profile which transcends all the rest. Thus, in the "Cordillera Nevada de los Andes" is found the full equivalent of the South American mountains, volcanoes, active and extinct, crowned with glaciers and of immense altitude, battlements of columnar basalt, pedrigals of lava, subterranean and thermal streams. The plateau and its primary chains outrival in area and interest those of South America and Asia combined. Finally, the stern and stupendous masses of the Himalaya find themselves surpassed by the primeval bulk, the prodigious length and breadth, the immense mesas, the romantic parcs, the far pro-

truding slanos, and the cloud-compelling icy peaks of the Cordillera of the Sierra Madre.

"The Chain of the Mother Mountain" is the generic name which piety awards to this continuous crest, down whose flanks descend all the feeders of the oceans. Let me name them: the Athabasca, the Saskatchewan, the supreme Mississippi, the Texan rivers, and the Rio Grande del Norte, the Fraser, the Columbia, and the Colorado in the northern continent. In the southern, the Magdalena, the Orinoco, the Amazon, the La Plata, the Patagonia rivers, and those of the Pacific slope! Is not this Cordillera then rightly called the Mother of Rivers?

The fresh waters of the earth come from the clouds; the clouds come by evaporation from the expanses of the oceans. We shall know that the Sierra Madre divides and rules the invisible fluids of the atmosphere, equally as the waters which we see descending down the flanks.

But let me at present restrict myself to the Cordillera as it runs athwart our own country, and define its varied features as they display themselves to my eye, looking out as I now am westward to the Pacific.

It is where the mountain mass debouches north from the Isthmus of Tehuantepec, that it bifurcates into the two primary Cordilleras, which continue to expand from one another. The Mother Mountain, on the east, gives its form to the Gulf of Mexico, whose shore it pursues nearly to the Pass of Monterey and Saltillo. Hence to the Arctic Sea the crest preserves a very regular line to the north-north-west. At the point of entrance into our present territory, it is gorged by the cañon of the Rio Grande del Norte. This cañon is a gorge cut obliquely through and through the bowels of the Cordillera, where the river, burrowing a chasm 125 miles in length, accomplishes at once its exit into the maritime region and its descent from the "Plateau

of the Table Lands." This gorge, impracticable for common uses, is the only water current by which the Sierra Madre is perforated anywhere between the extremities of the continent. I have elsewhere spoken of this cañon, together with that of the Colorado and that of the Columbia, as the three remarkable water-gaps whereby the plateau discharges its surplus waters to the seas.

The Cordillera of the Sierra Madre enters our territory in latitude 29° , longitude 103° , and passes beyond the 49^{th} , in longitude 114° . Its length, then, within these limits, exceeds 1600 miles. It maintains an average distance from the Mississippi river exceeding 1000 miles, and has the same distance from the beach of the Pacific Ocean; it forms, therefore, a continuous summit crest parallel to and midway between them. All the varieties of formation which distinguish the mountain chains of the continents here follow one another, or are blended in groups, and exist on a Titanic scale of magnitude. Mesas exist, being mountains of immense base, and perpendicular walls, whose summits have the level surface and smoothness of a table; Butes, which are conical peaks wrought into perfect symmetry of contour by the corroding power of the atmosphere; Slanos, being mesas of inferior elevation prolonged outward as promontories protruding from the mountain flanks, and separating from one another the descending rivers; Cañons, chasms walled in on either side with mural precipices of mountain altitude; Bayou, or parks, valleys scooped out of the main dorsal mass of the Cordillera, within which they are encased, each as an amphitheatre. This mountain crest, exhibiting all these varieties of profile, has, when seen against the horizon, the resemblance of a saw or cock's-comb, whence the sobriquet Sierra; the continuous mass on which they rest resembles a chain of links, or cord with knots, whence the name Cordillera. Thus is seen the expressive definition wherein the first Europeans, the Spaniards, our predecessors, have compressed

this supreme mountain feature of our continent, Cordillera de la Sierra Madre!

To bring the mind to an easy and familiar understanding of this subject, embracing so many details, it is necessary to ascend to the summit crest at the forty-ninth degree, to follow its sinuous edge to the south, to skim from point to point of the serrated profile, and, from this elevation, to extend the vision outward on either flank to where it subsides into the general foundation of the continent. From such a position the eye continually overlooks the "Plateau of the Table Lands" on the west, the "Basin of the Mississippi" on the east. The average elevation of the crest is 12,000 feet above the sea, that of the broad pediment, from whose longitudinal axis it rises, 6000 feet; the breadth across is 300 miles; so stupendous in area, bulk, and solidity, is the mass of the Sierra Madre! Every one has built card houses in childhood, having a second story over the centre; such a structure illustrates a cross section of the Sierra Madre in its primeval form. This regularity of form has disappeared under the corroding influences of the atmosphere, operating during countless ages, and the abrading powers of a thousand rivers, carrying down their attritions to the sea; what is left presents an immense labyrinth of mountain summits, undermined and channelled to a profound depth by the yawning gorges of the streams.

Advancing then along the Mother crest in the direction indicated, the whole eastern flank of the 43d° of latitude, and 109th° of longitude (the South Pass), is striped with the rivers which converge to form the Missouri proper and the Yellowstone. These are the Milk river, the Missouri, the Wisdom, Jefferson, Madison, and Gallatin forks, all converging into the Missouri; the Yellowstone proper, the Wind, Pokeagie, and Powder rivers,

all converging into the Yellowstone. These rivers, each having its complement of affluents, are all of great length, and pour down an immense volume of waters. A very small proportion reaches the sea, for where they debouch from the mountains at the lowest altitude, these waters are consumed by evaporation, rising to quench the thirst of the arid atmosphere and surface of the great prairie ocean. But down the western flank, within the same limits, descend rivers of equal number and magnitude, going to traverse the elevated "Basin of the Columbia;" these are the Columbia proper, the Cottonais, the Flatbow, Pend-oreilles, Spokaw, Salmon, and Snake rivers. These rivers have a more immediate descent to the sea than those upon the east; the mountain spurs between them are, therefore, more numerous, abrupt, and of greater altitude. It is easily discernible that over this serrated crest, whence so many rivers radiate as from a single knife edge, there are many depressions or passes, having every variety of altitude and accessibility. The gorges which lead outward from these passes, all eventually converge to the Missouri and to the Columbia.

The more southern portion of this mountain crest, where it divides the waters of the Yellowstone and Snake rivers, and is seen from the great road of the South Pass travelled by our people, has the local name of "Wind River Mountain." The mountain crest, curving to the east, and describing a semicircle, envelops the whole basin of the Yellowstone as in a *cul-de-sac*, and subsiding gradually, in altitude, disappears upon the bank of the Missouri. It is by this peculiar configuration that the mountain crest here practically disappears, and leaves the open depression of the South Pass, into which we gain access by the Sweetwater on the east, and by Snake river on the west, passing, by this means, completely around the arc described by the Wind River Mountain crest.

A similar configuration to this exists, on a small scale, in the Alps dividing France from Italy, which may be mentioned here on account of the aptness of the illustration and the familiarity with which history has for twenty centuries invested it. It is where the Alpine crest, under the successive names of Savoy, Alps, Mount St. Genis, and Maritime Alps, sweeps round in a regular arc from Geneva to Genoa, and thence subsiding into the Apennines, bisects Italy lengthwise to the sea. Within this arc is embraced the basin of the Po, called once Liguria, but now Piedmont. Around this arc marched the armies of Brennus and Hannibal; those of the Romans passing into Gaul by the plain of the Rhone; and here also still pass the armies and people of France and the modern Europeans.

Upon Snake river is developed the most northern of the parks. As this river descends from the Sierra Madre, it debouches into and bisects an immense plain of the most novel and remarkable features. This is the Lava Plain. It is an elliptical bowl, embraced between the Salmon river and Snake river Mountains, 325 miles in length and 95 in breadth. It is a uniform pedregal or flat surface of vitrified basalt, melted by volcanic fires, and congealed as into a lake of cast iron. Along its longitudinal axis stand isolated peaks, known as the "Three Buttes," which erect themselves to the snow line, like volcanic cones protruding above the sea. Cracks of profound depth traverse this plain, whose blasted surface is without vegetation or water. It is traversed beneath by subterranean streams, which issue from natural tunnels in the wall of Snake river, plunging into its bed by magnificent cascades. Bald nakedness, rather than sterility, is the extreme characteristic of this wonderful plain, which has around its rim a fringe of little "vases" upon the streams bubbling from the mountain base, of exquisite fertility and of the most perfect romantic beauty. When we call to memory the interest attracted

in every age to the diminutive formations of crystalline basalt upon the north of Ireland, near the city of Mexico, and in Southern Italy, we are struck with awe at the repetition here of these same phenomena, on a scale of stupendous grandeur.

Upon the alternate flank of the Sierra Madre, the bowl of the Yellowstone properly classifies itself as the second in order of the *parcs*, having its oval form streaked longitudinally with many parallel and narrow mountain ridges gorged by parallel rivers. This *parc* is very fertile, of the grandest scenery, and a delightful climate.

Such is a partial sketch of the Cordillera of the Sierra Madre, from the 49th° to the 43th° of latitude. A few denominating features only are pointed out; the serrated crests, alternately rising into peaks and mesas above the snows, and depressed by passes; the flanks gorged by descending rivers or branching out into mountain spurs between them—the *parcs*; the general direction is south-south-east. I omit to speak of the regions around the higher sources of the Missouri and Columbia, and still onward to the north, not because they are less interesting and attractive, but because I have not myself seen them, and because they are of identical features, and are as yet remote from the column of progressing empire.

The third *parc* is the plain of the South Pass. Although adjacent to the other two, it is in perfect contrast to them in all its characteristic features. Its surface of clay has the perfect smoothness of a water plain, over which the eye ranges without interruption. Rain is rare, and the vegetation of grass and *astemisia* scanty and uniform. Upon its south front rises again the Cordillera, under the local name of Table Mountain. This forms an immense arc, similar to the Wind River Mountain, but in the opposite direction, for, turning to the south-west, it subsides to the Rio Verd, which is the great Colorado. These two

arcs approach one another within thirty miles, forming a double corner over the gorge through which the Sweetwater escapes. To mark the continuity of the mother crest, a gentle crown traverses the plain from one mountain corner to the other, only traceable by the perfect division which it makes between the waters of the Atlantic and Pacific Oceans.

In the Table Mountain the Cordillera rises again. It resumes its direction, configuration, and altitude, which it preserves with uninterrupted uniformity clear through the continent to Tehuantepec. As far as the 38th° of latitude it sheds the waters of the great Colorado from its western flank; those of the Platte and Arkansas rivers from its eastern flank.

I am admonished here to pause and fix attention on the number, grandeur, and variety of the physical elements combined around this culminating point of the mountains and the rivers of our continent. Nature here, more perfectly than at any other point upon the globe, unites into one grand *coup d'œil* all her grandest features, which, harmoniously grouped, present to the mind a combination of superlative sublimity. These contrasted paces, so different, yet so close together! the intense massiveness of the Cordillera! the number and proximity of great rivers! the brilliancy and serenity of the atmosphere in which they shine! the awful storms which at long intervals brew among and shatter the iced mountain tops! the graphic conviction ever present to the mind of the immediate presence and presiding omnipotence of the Creator! The impression left with me, and made by the peculiar grit and appearance of the soil which overlays the plain of the South Pass, is of a "placer of kaoline," resembling the biscuit from which porcelain is burned. This is disintegrated, and washed down from the bald mountain flanks of porphyritic granite. Whether there may be also here concealed immense placers of gold and precious stones, coming from the same source,

is not yet tested; but such ought to be the fact, from the pure auriferous material of the mountains.

To resume again the pursuit of the mountain crest. This continues to recover its altitude. Soon upon the eastern flank the Northern Pare, or Bull-pen, reveals itself; along whose centre meanders the great Platte river, here running to the north in a direction contrary to the mountain crest. This is the fourth in number of the pares, but has been the first and best known in popular reputation. Being very large, very central, and easily accessible to us going out from the lower Missouri, it became the first favorite winter home of the early trappers and explorers. It is an amphitheatre of large area, whose mountain sides, covered with soil, vegetation, and scattered forests of evergreens, slope gradually up on every side. Its level plain is laced with streams and checkered with meadows, sparkling with flowers and romantic groves, in perfectly graceful alternations; its atmosphere is genial and exhilarating, and the temperature mild throughout the year.

Immediately beyond the highest extremity of the fourth, but upon the west or alternate flank of the mountain crest, the eye drops into the bowl of the fifth or Middle Pare, expanding to contain the confluent streams which form the grand river of the Colorado. This pare is larger in area than the fourth, but is vexed with far-protruding mountain spurs, narrow streams rattling over rocky beds, and a cloudy atmosphere, made fitful by the altitude and close proximity of snow-clad mountain backs. This pare has its mouth towards the Pacific. Towering up from the mountain crest, where it divides these two pares, rises the snowy head of Long's Peak, whose eastern front beetles over the Great Plains, from which it is seen for fifty leagues by those who travel up the Basin of the Kansas.

Still immediately follows on the eastern flanks the Bayou

Salado, or Southern Parc, which is the sixth. This is the mountain's bowl, scooped out for itself by the Southern Platte, as it descends from the snowy cap of Pike's Peak. This parc has the same general characteristics as the fourth, but is greatly inferior to it in size, fertility, and climate, being closely hedged in by great mountains, from whose snows descend incessant storms, and a febrile dampness infesting the atmosphere. From the same glacier which surmounts Pike's Peak descends the Arkansas river upon the reverse slope. The river has no parc; it defiles into the plains through a cañon.

Here is discernible in the mountain crest the same curvilinear sweep as in the Wind river mass. Here occurs a similar concentric knot of mountain crests, rivers, and parcs. But here the mountain crests, having curved outward to accomplish the separation of the Platte and Arkansas, condenses into the snowy promontory of Pike's Peak, and terminates in an abrupt precipice to the Great Plains.

At both of these remarkable focal points, nature seems to have instituted a primeval conflict between the abrading power of the rivers and the stubborn resistance of the porphyritic durability of the mountain barrier. At the northern focus, the triumph of the rivers presents a complete harmony of the passes, which enter at all points upon the plain of the South Pass, and connect across it. At the southern focus, the unscathed impenetrability of the mountain porphyry presents on every front its mural precipice of undiminished altitude; here, then, the austere rigidity of the mountain mass triumphs and admits no transit through.

To complete the perfect counterpart resemblance between these foci, opens from the western flank of the mother crest, the Bayou St. Louis, which is the seventh Parc. This is, in physical formation and in every detail, the exact twin-counterpart of the parc of the "Plain of the South Pass." The Sierra Mimbres

bounds its western edge, along whose base flows the Rio Bravo del Norte. Triangular in shape, level as the sea, equal to the third part in area, encompassed by the sublimest scenery, abundantly irrigated by streams, 6500 feet in altitude, it has an alluvial soil of luxuriant fertility, and seasons eminently propitious to agriculture. It is in this delicious "Bay of the Sierras" that the current flow of time will find renewed, identified, and developed, all the charms with which Oriental narrative and song have invested the lovely Valley of Kashmere!

The Spanish Peaks surmount the mountain crest under the 38th° of latitude. From hence to the 29th° it sheds the waters of the Rio Bravo del Norte from its western flank; from the eastern flank descend the Arkansas and the Red river, flowing to the Mississippi, and the rivers of Texas, flowing directly to the Gulf. The whole front is masked towards the east with a screen of secondary *mesas* (tables) termed distinctively *slanos*. These are immense triangular terraces, of half the altitude of the Sierra, resting against its flank, protruding outward many hundred miles, gradually dwarfing in breadth until they terminate in an acute angle. They have an uninterrupted level surface of calcareous soil, a scanty herbage, and rainless atmosphere, an imperceptible dip towards their terminations, where they present an abrupt wall of many thousand feet in altitude, suspended above the Great Plains. All along these mural flanks come out innumerable streams, which go to form the Arkansas, the Red river, and all the rivers which traverse Texas. Thus is explained the confusion which perplexes the public mind, struggling to arrange the physical configuration of this immense region, as yet only partially explored. To the Mexican people who inhabit the higher mountain region, this is known as the lower plain; by the people of the maritime region, who see from below its ragged

front, it is designated as the Guadalupe Mountains, and by other names.

But this system of *slanos*, seen most distinctly in Texas as the *Slano Estacado* and the *Slano* of the *Balsifœta*, has an extent and magnitude on a scale commensurate with all the other distinctive formations. It is the continuous screen or Piedmont which graduates the immense declination in altitude, from the summit crest of the Cordillera to the smooth expanse of the Great Plains, appearing from above as a depressed mesa; from below as a series of ragged mountain chains. Geologically it is, as it were, a continental terrace or steppe, or bench of the sulphate of lime (plaster of Paris), elevated above the Great Plains, which are carbonate of lime; depressed below the Cordillera, which is porphyritic of granite.

I may, with propriety, pause here to speak of the Basin of the Kansas, both on account of the fitness of the opportunity, and because this delicious country, surrounding the very *navel* of our continent, and embracing its geographical centre, has from that fact a perpetual and paramount interest. The Kansas river has its extreme sources beneath the roots of Pike's Peak, where they have ceased to interrupt the plains. The Platte and Arkansas envelop it, and form a line of drainage between it and the Cordillera. But in front of the Kansas Basin, the screen of the Piedmont is interrupted and disappears, so that the Great Plains stretch up to the base of the naked Cordillera, which reveals at one sight the towering masses of Pike's and Long's Peaks, and the curtain of snowy mountains which connects them. A similar *coup d'œil* is seen, as presents itself to an Italian standing upon the Po above Milan, whose eye sweeps the Plain of Lombardy, and ascends to the snowy summits of the highest Alps, without any intervening objects to interrupt the vision. A similar resemblance to the Alpine formation which characterizes the par-

tially-explored masses immediately to the west, has acquired for them the local name of "Helvetian Mountains." From these two peaks—Long's Peak to the north, and Pike's Peak to the south—as from twin-radiating points, the Piedmont expands from the eastern flank of the Cordillera, like a half-open fan. Towards the north is the Medicin-Bow Mountain and the Laramie Plain; towards the south, the Ratone Mountain, the Slano Balsifœta, and the Slano Estacado.

Such is an effort to delineate and classify the prominent physical features of the Mother Cordillera of our country; the serrated axis which forms its core; the system of parks; the system of rivers and mountain spurs; the peaks and mesas; the system of slanos. Its material mass is primeval granite. Volcanoes, active or extinct, craters and their igneous discharges, are not found. (These exist upon the plateau and in the Andes beyond.) This Cordillera is auriferous throughout. It contains all forms of minerals, metals, stones, salts, and earths; in short, every useful shape in which matter is elsewhere found to arrange itself, and in all the geological gradations.

The prominent agricultural feature of the Cordillera is fertility—pastoral fertility. Stupendous peaks and battlements exist, extreme in bald and sterile nakedness; plains there are blasted with perpetual aridity and congealed by perpetual frosts. The space thus occupied is small; indigenous grasses, fruits, and vegetables abound; it swarms with animal life and aboriginal cattle; food of grazing and carnivorous animals, fowls and fish, is everywhere found; the forests and flora are superlative; the immense dimensions of nature render accessibility universal. An atmosphere of intense brilliancy and tonic tone overflows and embalms all nature; health and longevity are the lot of man.

It is necessary to be condensed and brief. A million of interesting facts are left unmentioned. Then the Cordillera of

the Sierra Madre is but a third part in area of our "mountain formation." If the inquiring spirit and patriarchal fire of Jefferson and of Astor still burns in the popular heart, the continental mission of 1776 will revive and reanimate our generation. Counterfeit geography, promulgated with official dogmatism, will cease to be fashionable, or to defeat the divine instinct of the people. Patriotism, pioneered by truth and genuine science, will reveal and comprehend our continental geography as *it is*, huge in dimensions, sublime in order and symmetry, a unity in plan. Our political and social empire, expanded to the same dimensions, harmonized to the same chequered variety, will assume a similar order, a like symmetry, and crown hope with a similar solid and enduring perpetuity.

CHAPTER VI.

THE PLATEAU OF NORTH AMERICA.

It is now fifteen years, nearly half a generation, since I submitted to the scrutiny of science and the public "A Hydrographic Map of North America," exhibiting in daguerreotype the cardinal physical arrangement of our continent. Upon this, is exactly defined the Mountain Formation, enclosing the Plateau of the Table Lands. This subdivision of our country, amounting to one-third of the whole area, comes now in the bounding march of empire, to have a necessary, an intense, a pre-eminent interest to our people. Undoubtedly the scheme of Independence, inaugurated in 1776, sustained through the fortitude of the Revolution, and consummated in the Union of 1787,

contemplated and commenced a Continental Republic! In the ripening of time, we are now called upon to receive into this continental Union, the independent and equal States of the Plateau, and to construct across it the continental railway.

How it is that immense facts, dormant since creation, and noticed only to be unanimously rejected by human society, flash suddenly out of midnight obscurity, and by a single step plant themselves upon the very throne itself of public attention, may be thus illustrated: Columbus, intent upon discovering a direct route by sea to Oriental Asia, died without any thought of the new continent, or knowledge that he had seen it. Amerigo Vespucci, a younger navigator, identified the new continent, established its existence in the popular mind, and gave to it his own name, America.

Thus, in 1842, commenced to agitate itself throughout America, the energetic geographical movement, to reorganize the column of central progress artificially stagnated in Missouri since 1820. Exploration, conquest, the conversion of the wilderness, have since advanced with intense celerity. As is the case with all normal instincts, war, peace, domestic and foreign schemes of opposition, have each contributed to precipitate its advance and fire its activity. The American people are then, now advancing, victoriously to plant democratic empire co-equal with the area of the continent. The grand novelty which rises in front, is the Plateau of the Table Lands. This Plateau, enclosed within the Cordilleras of the Mountain Formation, possesses characteristics new to mankind, and about to arrest the attention and sway the mental energies of America.

In the first place it is necessary, by reference and comparison, to identify this plateau; to discover what and where it is; and thence to go on and demonstrate its area, its climate, its capacity, and its geographical power in the world.

Asia contains two plateaux: South America, one: North America, one. Europe and Africa have great mountain chains, but no plateau.

The immense Plateau of Asia occupies the central region of that continent, extending east and west from the Pontic Sea to Middle China. It is enclosed between the Himalaya Mountains and those of Siberia, embracing the upper and lower plains of Thibet and the great lakes, the Caspian Sea, the Sea of Aral, and the Balkash Sea, with the rivers that flow into them. This great space is fenced imperviously from the oceans by a circuit of primeval mountains: it extends east and west 4800 miles, between the latitudes 35° and 50° . Its average breadth, north and south, is 1200 miles. Such is the immense continental plateau of Asia, of which our knowledge is imperfect, as to its population and the grade of civilization they fill. We know that from primeval time, periodical swarms of conquering barbarians have descended down its flanks and deluged all the continents to the seas, convulsing empires and displacing all organized societies. These convulsions have extended to the extremities of China, of India, of Europe, and into Africa. Such is a short and significant memorandum of this plateau, remarkable for the high antiquity, the numbers, and the uniform barbarism of its populations. It is entirely north of the Isothermal temperate zone.

The Plateau of Syria occupies the space between the Persian and Red seas: the Dead Sea is within it and the peninsula of Arabia: it has no large rivers, but is flanked by the Euphrates, the Nile, and the Mediterranean. It lies across the Isothermal temperate zone from edge to edge. Here is the original birth-place and cradle of human history and inspired civilization. Down its flanks have descended all the ethereal systems of the world, which enter the heart of men and inspire true religion,

true knowledge, political liberty, and which erect, enlarge, and perpetuate civilized society. Hence have gone forth to the extremities of the earth and to the human race throughout all time, the genuine oracles of God revealing religion and liberty, to achieve the conquest of idolatry and barbarism, and displace them from the human heart.

Beneath the equator, upon the summit of the Peruvian mountains, is the Plateau of the Andes. Here was the delicate empire and system of the Incas, which withered before Pizarro and the Spaniards as a vine before the tropical siroc. It contains the Lake of Titicaca, and is without rivers. Of excessive elevation and aridity, small in area, arduous of access, and approachable only through torrid heats which surround its base and flanks, this Plateau is entirely without the belt of the Isothermal temperate zone.

Such are the three other Plateaux! We now approach the fourth—our own—the Plateau of North America.

I have heretofore written of this Plateau: I speak with great diffidence; but of all the departments into which science has arranged the physical geography of the globe, this appears to me the most interesting, the most crowded with various and attractive features, and the most certainly destined eventually to contain the most powerful and enlightened empire of the world. At present it is no more known or comprehended as it is, by the American people, than was America itself by the poet Homer. It is to them as much a myth as was then the continent of Atalanta. Nevertheless, it is of such great area as to contain within itself three great rivers which rank with the Nile, the Ganges, and the Danube in length, and five great ranges of primary mountains.

The Andes, where it issues from the Isthmus of Tehuantepec, divides into the two Cordilleras of the north. The one pursues the shores of the Mexican Gulf; the other, the shores of the

Pacific Ocean. The Cordilleras, continuing to open from one another, run with great uniformity of bulk and altitude, through to the Polar Sea. At the 43d degree of latitude they are 1400 miles asunder, which is here the breadth of the Plateau. The eastern Cordillera is the Sierra Madre (the Mother Mountain); the western Cordillera is the Sierra Nevada de los Andes (the Snowy Andes). This then, the whole immense area encased within the Cordilleras from Tehuantepec to the Polar Sea, is the Plateau of North America! The Cordilleras have a general altitude of 12,000 feet; the Plateau of 6000. The Plateau is 4000 miles in length, having its direction from south-east to north-west; its superficial area is 2,000,000 square miles. The portion within our territories is one-third of the whole country.

Such, then, is the geographical position, the area, and the altitude of the *Plateau*. Its longitudinal position is remarkable, having its extremities within the equatorial and the polar zones; but its greatest breadth and area is across the Isothermal temperate zone. Its whole western front is closely flanked by the Pacific Ocean; its eastern front by the Gulf of Mexico and the Calcareous Plain. It erects itself continuously along between these, and either connects them together or separates them asunder.

The *Plateau* has a general configuration, simple as a unit in the physical geography of the earth; the details are infinite and complicated, all marked by a grandeur in harmony with its vastness. In the elements which attract and perpetuate the social host of civilized men, no other region can assert or hold communion with it. It denominates as a standard, which can have no equal. It is subdivided into seven great basins, which succeed one another in order from the south towards the north. The basin of the city of Mexico is the first and most known. A central

lake collects the waters of the basin, which has no drainage to the sea. The second basin is the Bolson de Mapimi. The Laguna de Mapimi collects its waters, and is also unconnected with the sea. These basins are divided asunder by the Sierra of Queretaro, which connects the Cordilleras across. The third is the basin of the Rio Bravo del Norte, which is divided from the second by the transverse mountain chain of the Rio Florida. This immense basin is drained by the rivers Del Norte, Pecos, and Conchos, which, uniting against the Sierra Madre, gorge it by a cañon and form below the Rio Grande of the Mexican Gulf. The fourth is the basin of the Colorado. The great Sierra Mimbres divides these two basins asunder after the manner of a back-bone, from which their waters descend down the reverse slopes. They are longitudinal, parallel, and overlap one another. Distinguished by stupendous volcanic phenomena, they pre-eminently constitute the metalliferous region of the world. The confluent rivers of this basin, where they unite to form the Colorado, gorge the Andes by the wonderful cañon of that name, and debouch into the California Gulf. The fifth is the basin of the Salt Lake, divided from the last by the great Sierra Wasatch. Within the vast circuit of its mountain rims, are contained many stagnant lakes receiving rivers of fresh water. This basin has no outlet to the sea. The sixth is the basin of the Columbia. The transverse chain of the Snake River Mountains parts these two last basins. Here is seen a most wonderful display of natural phenomena. The Snake and Columbia rivers, coming from opposite directions and penetrating immense mountains, unite together, gorge the Andes at the Cascades, and debouch into the North Pacific Ocean. The seventh is the basin of Frazer river. The Olympian chain divides it from the Columbia. From hence the

Plateau continues its direction through a region as yet but little known, and opens out upon the Polar Sea.

If a thread be drawn longitudinally through the Plateau, equidistant from the Cordilleras, it will bisect a line of sedimentary lakes resting as in the bottom of a trough. These are the Lake of Mexico, the Laguna, Gusman's Lake, the Great Salt Lake, the Pend'oreilles and Okanagan lakes. These waters have an average elevation of 6000 feet above the sea. The whole bulk of the Plateau has then the altitude of a primary mountain.

If the stupendous features of nature are allowed their solemnity of impression, and the majestic length and bulk of the Cordilleras be admitted, we may now understand what is the immense subdivision of our continent encased within them. We may receive and handle it as a unit, assign to it a name, "The Plateau," and identify its extent, its distinctive profile and position.

The climate of the Plateau is local and peculiar, but very uniform. The Cordilleras, by their altitude and remoteness from the sea, exclude the ocean vapors from the Plateau. A rainless atmosphere, perpetually dry, tonic, and transparent, is the normal condition throughout the year. Altitude and aridity united, temper the heat towards the equatorial zone; the same causes temper the cold towards the polar zone. The extremes of temperature for the day and for the night are great; for the seasons of the year scarcely perceptible. In one word, the temperature is uniformly vernal. Thus the genial and propitious climate of the isothermal temperate zone extends up and down the summit of the Plateau, and is felt to both extremities!

The soils of the Plateau are of the highest order of fertility, alike upon the mountains, the valleys, and the mesas or extensive plains. The dry and serene atmosphere converts the grasses into hay, and, preserving them without decay, perpetuates the food of grazing animals around the year. This gives to pastoral

agriculture an infinite capacity for production and superlative excellence. Meat food, leather, wool, fowls, fish, and dairy food are of spontaneous production.

The soils, accumulated from the attrition and decay of lava and of carboniferous and sulphurous limestones, possess an exuberant fertility. Spots of arid sands are few and insignificant; such as exist are from the auriferous granite, and contain placers of gold! These soils, then, composed of the essential elements of fertility and production, and warmed by an unclouded sun, need only irrigation to ferment their activity. For this, nature has provided in the configuration of the surface and the infinite abundance of snowy mountains, of streams and of rivers descending from their glaciers or bursting from their flanks. The descent from the longitudinal crests of the mountain ranges to the lowest levels, is everywhere by terraces or steppes arranged against the mountain flanks. Across these are channelled the gorges of the descending waters, coming from the gradually melting snows above. To guide these waters out upon these terraces and distribute it over the surface, involves neither excessive labor nor intelligence. It is understood and practised by the aboriginal people. The laborious systems of culture to provoke germination, the uncertain yield common to our people of the maritime region of timber and uncertain seasons, are here unknown and unnecessary. A perpetual sun and systematic irrigation (as in Egypt) dispense with laborious manual tillage; the use of the plow is not indispensable: the waters for irrigation descend from a higher level and are constant. The laborious extermination of the primeval forest; fuel and refuge from the inclement seasons of heat and cold; periodical and uncertain inflictions of drought and saturation; dependence upon an atmosphere ever changing and for ever fickle and treacherous; none of these vicissitudes are seen or known upon the Plateau. The adobe

brick, of unburned clay, constructs fences and houses, inhabited more for domestic seclusion and convenience than from necessity. Upon the high mountain flanks, within the influence of constant snow, exist abundant forests with the rank summer grasses and vegetation; the proportion of these is ample and harmoniously distributed. The Plateau presents itself, therefore, prepared and equipped by nature in all departments at every point, and throughout its whole length, for the immediate entrance and occupation of organized society, and the densest population. Of this we have an absolute illustration. It is where, upon the terraces surrounding the Great Salt Lake, six or seven years has developed in the wilderness a powerful people, possessing in practice all the elements of mature and stable society; and, moreover, in the ease with which a numerous army has transported and sustained itself, without disaster or calamity, at the same remote destination. Accessibility on to the Plateau, is wonderfully facile and unobstructed over a tranquil ocean on the one hand, by the Great Plains on the other.

Amidst the chequered variety which distinguishes the surface of the Plateau, the most systematic order is discernible. The transverse mountain chains are parallel to one another. They, as well as the great rivers, have their courses due north and south, and are longitudinal in direction. The only exception is Snake river, and the Snake river chain of mountains: They exhibit a stupendous display of volcanic convulsions, extending over the basin of the Salt Lake. This is such as to excite the conviction that in primeval times the Blue Mountains of Oregon were imperforated, and between them and the Sierra Wasatch flowed a great river, discharging into the maritime basin of California.

If this were so, the harmonious configuration of the Plateau, from end to end, would be undeviating.

The great mountain chains, *six in number*, enumerated as the Sierra of Queretaro, of the Rio Florida, the Sierra Mimbres, the Sierra Wasatch, the Snake River Mountains, and the Olympian chain, all form continuous divides across from one Cordillera to the other. They are unperforated by any running waters, and block off the area of the Plateau into the seven isolated basins above named. Other mountain masses, branching from these sierras, protrude far out into the basins, are capped with snow, and rival them in bulk and altitude. Such are the Sierra La Plata, the Humboldt Mountains, and the Blue Mountains of Oregon. Spurs and minor mountain chains appear everywhere.

The central regions of the basins are occupied by great plains, surrounding the sedimentary lakes, or forming the immense troughs of the rivers; the *parcs* are amphitheatres secluded within the sierras, around the sources of the great rivers. The most remarkable are the Parc of San Luis, the Middle Parc, the South Pass, and the Lava Plain of Snake river. Elsewhere the great rivers assault the flanks of the Sierras and gorge them athwart, traversing them by profound chasms, and foam for hundreds of miles between perpendicular walls of rock. Such cañons are seen upon the Rio del Norte, the Colorado, the Snake river, and the Columbia, especially where they gorge the Cordilleras to reach the seas.

Such is the infinite assemblage of mountains, plains, great rivers, in every variety and magnitude, that unite themselves to form the immense area of the PLATEAU OF AMERICA! The features of its geology are equally various, vast, and wonderful; both mountains and plains promiscuously appear, of carboniferous and sulphurous limestones, lava, porphyritic granite, columnar basalt, obsidian, sand-stone, accompanied by their appropriate contents of precious and base metals, precious stones, coal, marbles, earth, thermal and medicinal streams and fountains; and

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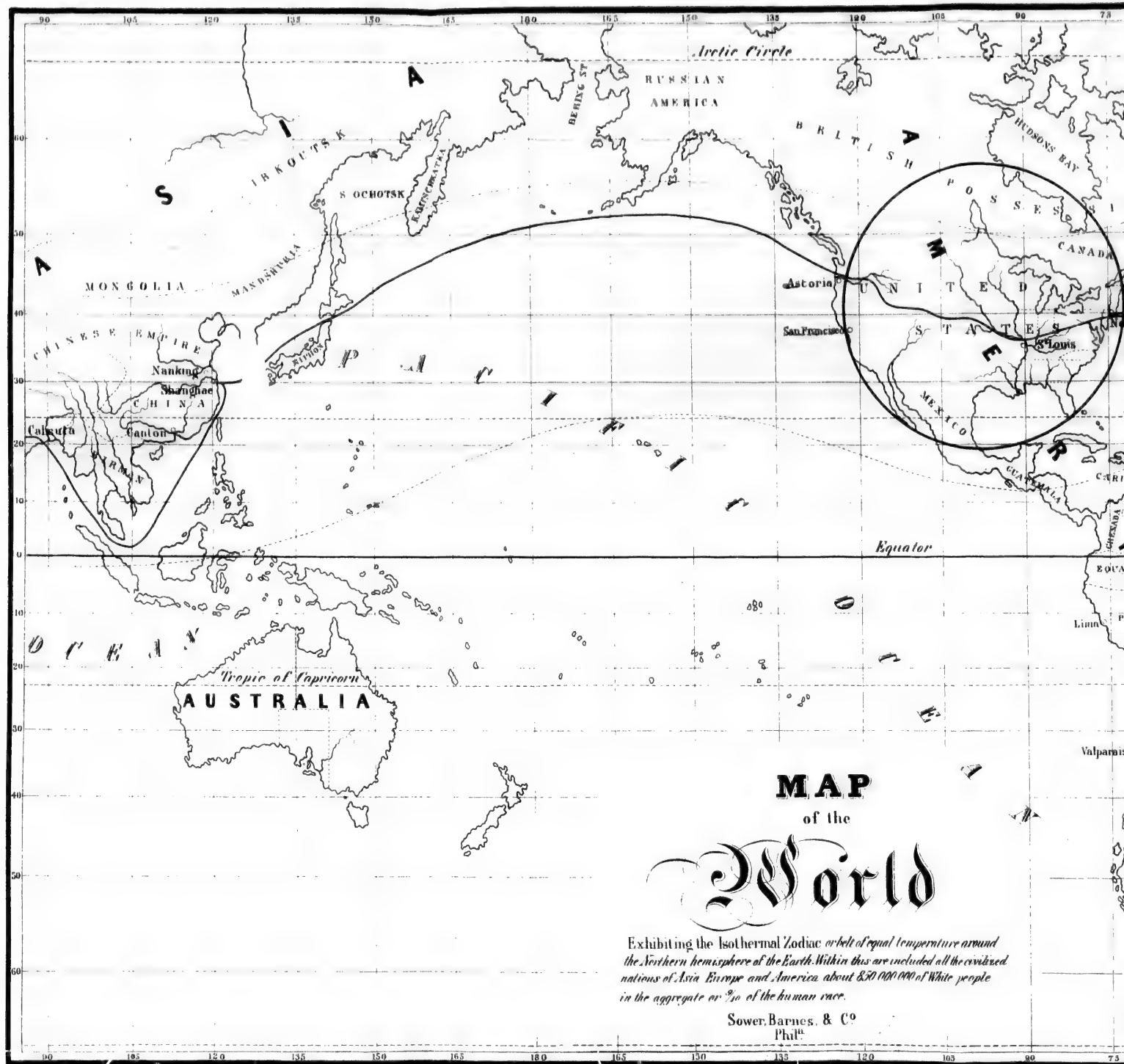
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all of these adorned by scenery for ever varying, fascinating, and sublime.

For agriculture, both pastoral and arable, no region of the world is more propitious, not even the Basin of the Mississippi, which is by its side. One remarkable characteristic pervades all the rivers; their waters are supplied (as are those of the Nile) from the high mountains, whence they descend. Such rivulets as abound in maritime countries are not known, but subterranean streams burst forth and again disappear. This systematic feature at once demonstrates the porous nature of the soils and the fertilizing character of the waters.

To revert again to the characteristic climate of the Plateau. It is continental, as contrasted with the maritime climates of regions open to the influences of the oceans and overflowed by their clouds and vapors. The Plateau is secluded from the presence of these clouds and vapors by the uninterrupted envelope of the Cordilleras, surmounting the line of perpetual snow. These clouds and vapors lodge themselves upon the summits of the Cordilleras, and of such of the Sierras as have sufficient altitude. From these the rivers are fed and descend to traverse the lower altitudes, and upon their summits are observable the atmospheric changes of maritime countries. But out upon the Plateau these changes do not reach. Here the constant alternations arising from rain-clouds are not felt. The atmosphere has a perpetual vernal temperature, unvarying, rainless, transparent, splendid, and serene.

It is along the axis of the isothermal temperate zone of the northern hemisphere that revealed civilization makes the circuit of the globe. Here, the continents expand; the oceans contract; this zone contains the zodiac of empires: along its axis, at distances scarcely varying from one hundred leagues, appear the great cities of the world, from Pekin, in China, to St. Louis, in



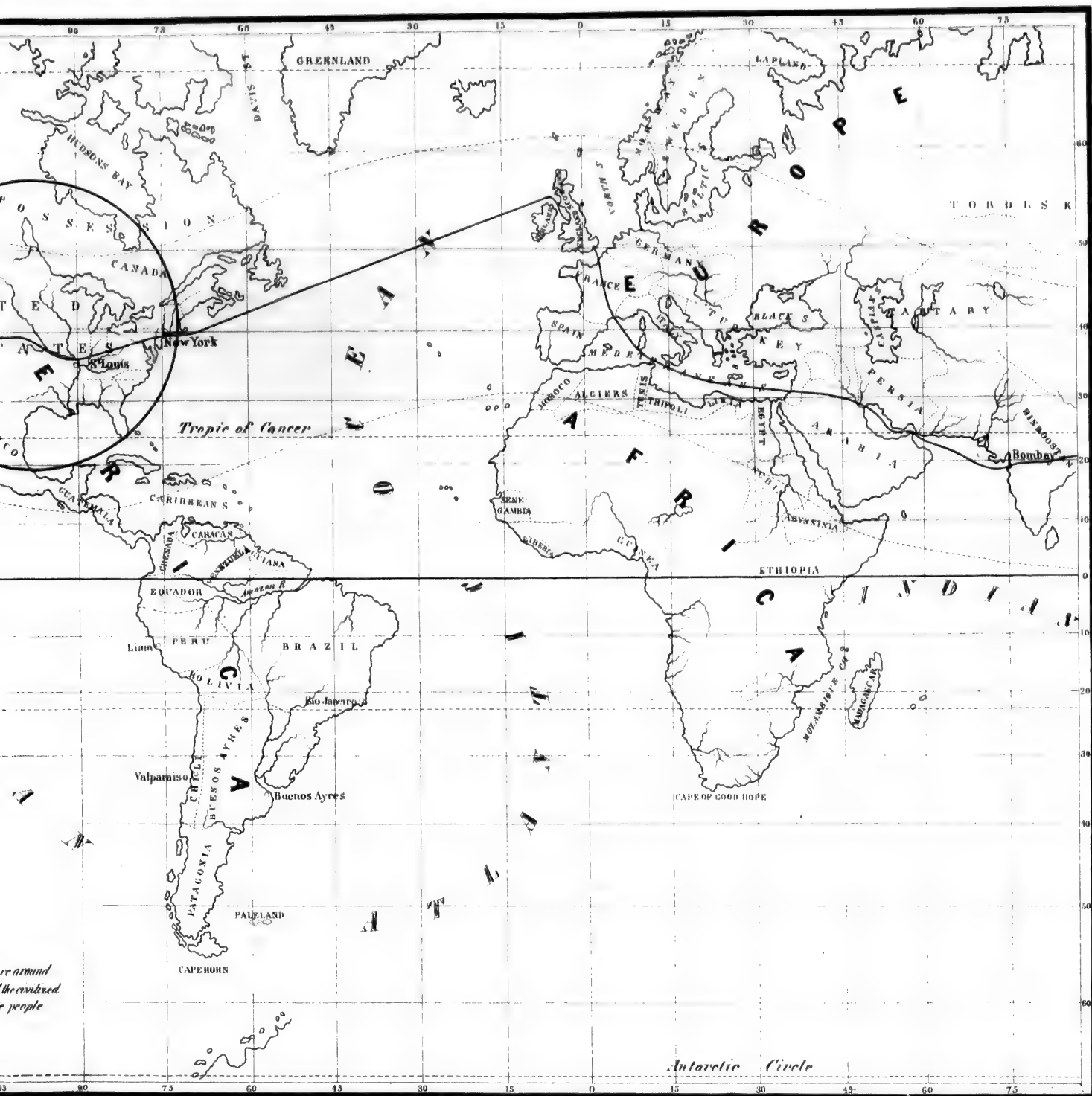
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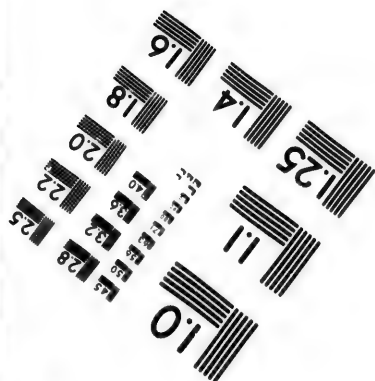
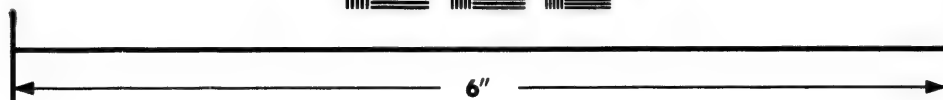
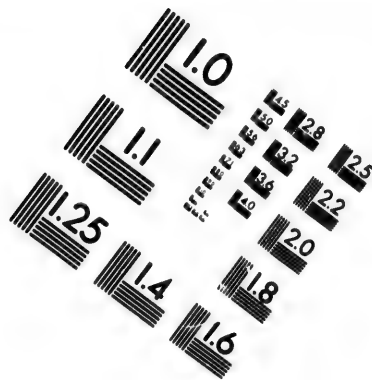
World

Exhibiting the Isothermal Zodiac or belt of equal temperature around the Northern hemisphere of the Earth. Within this are included all the civilized nations of Asia, Europe and America, about 8,700,000,000 of White people in the aggregate or 7/10 of the human race.

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America. During antiquity this zodiac was narrow; it never expanded beyond the North African shore; nor beyond the Pontic Sea, the Danube, and the Rhine. Along this narrow belt, civilization planted its system from Oriental Asia to the western extremity of Europe, with a more or less perfect development. Modern times have recently seen it widen to embrace the region of the Baltic Sea.

In America, it starts with the broad front from Cuba to the Hudson's Bay. As in all previous time, it advances along a line central between these extremes, in the densest form and with the greatest celerity. Here are the chief cities of intelligence and power, and the greatest intensity of energy and of progress. In 1820, this middle column of the centre had reached the western frontier of Missouri, and opened trails along to the Pacific Sea; the flanks were then behind in New York, Lower Canada, and in Georgia. In the overwhelming revulsion of all previous political precedents, which pervaded our Federal councils from 1816 to 1828, central progress was forcibly interdicted. Abruptly stopped by an Indian barrier and Draconic code, and forced to recoil for forty years, the flanks have come up to an even front upon the right and upon the left.

Science has recently very perfectly established, by observation, this axis of the isothermal temperate zone. It reveals to the world this shining fact, that along it civilization has travelled, as by an inevitable instinct of nature, since creation's dawn. From this line has radiated intelligence of mind to the north and to the south, and towards it all people have struggled to converge. Thus, in harmony with the supreme order of nature, is the mind of man instinctively adjusted to the revolutions of the sun and tempered by his heat.

Behold, then, in the geographical position and features of the Plateau of America, a crowning mercy and a miraculous light

displayed by God in our front, to illuminate for us the safe line of march and the whole area of expanding empire !

The central column of progress has already ascended on to the Plateau by the entrance of the South Pass, and established itself on the fertile terraces that surround the East Salt Lake ; it is established in New Mexico, upon the Upper Del Norte ; it prepares to enter by the passes of Pike's Peak and the Arkansas into the delicious parcs that surround the gold region of the San Juan ; it is upon the Columbia and Frazer rivers ; it has also passed over the Cordillera of the Andes, and it presents itself fronting to the east and entering from California.

Such is the Plateau of America, transcendent in position, immense in area, superlative in climate, fertility, and variety of configuration. Here are blended all the elements which distinguish the other plateaux of the world. Its longitudinal form ; the rainless character and perennial brilliancy of atmosphere ; its perpetual vernal temperature ; its alternate basins, parcs, and snowy sierras ; its great rivers ; its indefinite and propitious capacity to produce and to sustain population ; its gold, metals, and gems ; finally, its dominant position, beetling over the Asiatic ocean on the one hand, over the calcareous plain on the other hand, continuously from the Polar Sea to the equatorial belt ; all these arise successively and together to announce to the American people their accession to the most attractive, the most wonderful, and the most powerful department of their continent and country.

But the Plateau has the prestige of antiquity to commend it to favor. It was here that Cortes and the conquerors found the gorgeous empire of the Montezumas ! a polished people, highly cultivated, numbering many millions, and martyrs to their heroic devotion to the arts of peace ! The same marked characteristics still show themselves undiminished in the existing aboriginal

people, thinly scattered to the extreme north : curious, intelligent, and credulous, heroic and timid, vibrating quickly from superstitious veneration to despair. They invite and receive the white man as a new divinity, and then recoil, to shun him with hate implacable till death.

This is my understanding of the Plateau of America, condensed to a general but a compact view. At my first entrance upon it in 1843, my impressions were far otherwise. Everywhere appeared novel phenomena ; nature wore an impenetrable complexity of features alternately fantastic, sublime, *bizarre*, and incomprehensible. Time, reiterated exploration, study, and meditation, have revealed it to me as it is. It is necessary to ponder long before we may penetrate the deep designs of Providence, or be permitted to comprehend the austere and perfect order with which nature is everywhere replete.

CHAPTER VII.

THE SIERRA SAN JUAN.

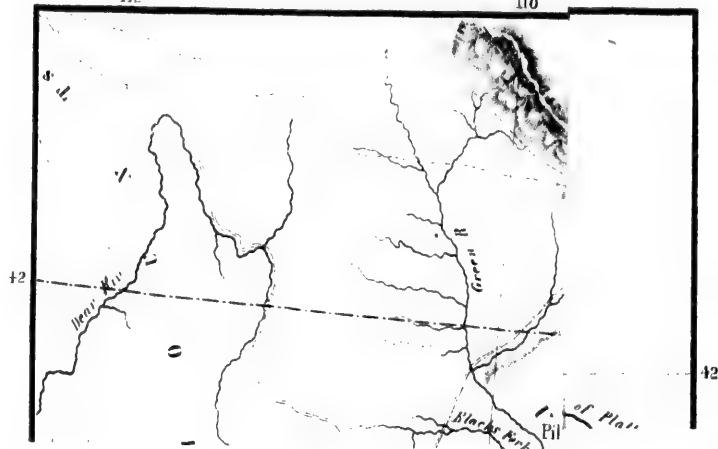
To command the gold and silver production of the world, and combine this with an intelligent policy, is to rule the world. The present ability of the American people to do this, will become manifest so soon as the geography of their territory shall become correctly understood by them, and its economical development made a systematic policy. A few standard facts in physical geography and geology being currently grafted in to guide the popular mind, the ease with which the people of America will

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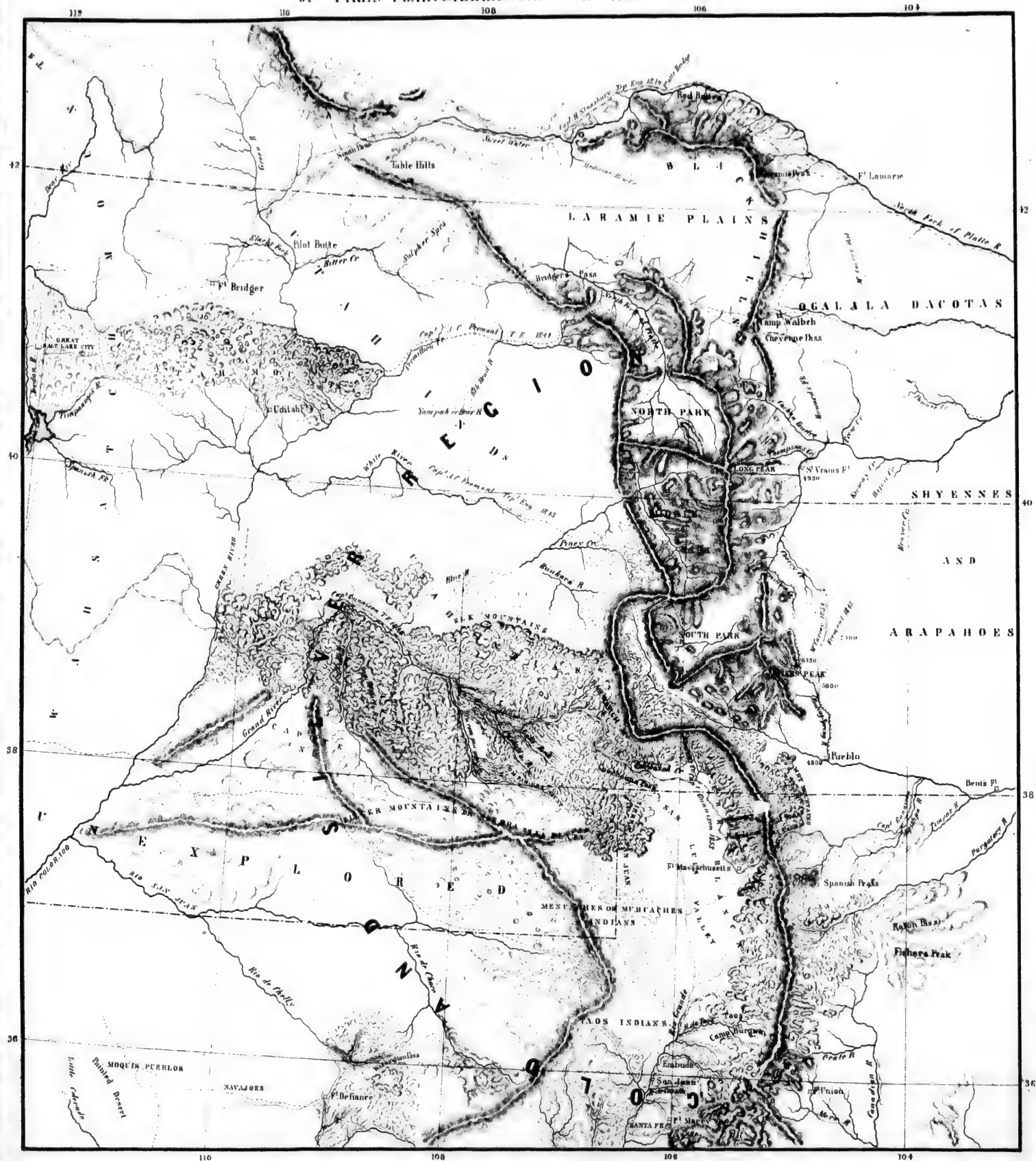


rise to the pinnacle of power and empire, becomes both simple and luminous of comprehension.

I have in a former chapter defined to itself the "Great Plateau of the Table Lands," and enumerated the primary mountain chains, the rivers, and the elevated basins (seven in number) which chequer its immense area. This whole area, together with the great flanking Cordilleras, is of the primeval, auriferous formation. Although immense sand-stone and calcareous formations are frequent, and elsewhere igneous rocks have overflowed thousands of square miles, these overlay a uniform pediment of porphyritic granite, as uniformly yielding gold. The primeval, gold-bearing formation, therefore, very equally divides the area of the continent, half and half, with the calcareous formation, which latter abounds with the base metals. Thus, within the present territories of the American people, the precious stones and precious metals, platinum, gold, silver, quicksilver, exist in the as yet partially developed half, with the same abundance and universality of distribution, as do the base metals, mineral fuel, and calcareous rocks, within the States.

Investigation within "the great calcareous plain" has so far progressed, that we trace along its diagonal axis a metalliferous band, traversing continuously from the neighborhood of Mier, on the Rio Bravo del Norte, to the junction of Coppermine river with the Arctic Sea. This band, resembling a sword-belt suspended from the shoulder and knotted upon the hip, traverses Texas in a direction north-north-east, crosses Arkansas and Southern Missouri diagonally, Northern Illinois, Wisconsin, and Minnesota, and, brushing the extreme shores of Lake Superior, and Hudson's Bay, sinks into the Arctic Sea, near the Magnetic Pole. Everywhere within this band the calcareous rocks and soils are permeated with veins and native masses of the base metals, existing in a plenitude and purity sufficient to supply the

MAP OF THE GOLD AND SILVER REGION OF PIKE'S PEAK, SIERRAS SAN JUAN AND LA PLATA.



world for ever. What is seen and known upon the surface, indicates a systematic order throughout in the relative positions of the different metals and their accompanying rocks and earths, as also in the localities where each exists in excess, and may be said to culminate. Thus in the State of Missouri iron appears protruding above the general level, over an immense area, attracting exclusive attention and the appellation of Iron Mountains, by reason of the immense formation of this metal, which displays itself for many hundred square miles above and below the surface, in mass and in position. Copper may likewise be said to culminate, where it displays itself around the extreme waters of the St. Lawrence, in mass and in position. Thus likewise of lead, where it appears in indefinite abundance by itself, in Wisconsin, Missouri, and Arkansas.

The existence of the base metals of native purity in mass and in position, on an immense scale and within the calcareous formation of the basins of the Mississippi and St. Lawrence, is now become established. The question arises, therefore, whether there exists within the primeval formation any parallel phenomenon, or any possibility of the existence, accessible to human research, of the precious stones, of gold, silver, and the kindred precious metals, in mass and in position.

The possibility, and even more, the *probability* of such a development resulting from persevering exploration among the Sierras of the plateau of the table lands, becomes distinct as their geological configuration is revealed.

We have seen, in a former chapter, that the Cordillera of the Sierra Madre presents within our territory two remarkable focal culminations—the one grouped around the Wind River Mountain, the other surrounding Pike's Peak. These are about four hundred miles apart; they are connected by the continuous chain of the Cordillera as by a curtain. Either one, contemplated by

itself, fills the same significant place upon our continent, as does the Alpine group surrounded by the kingdoms of Europe, in the topography of that continent. A parallel altitude, grander bulk, larger rivers, the sublimest scenery, a rainless atmosphere, and a foundation of broader and more solid dimensions, distinguish our continent.

To all who ascend the great plains in the neighborhood of the 39th° of latitude, the snow-crested mass of Pike's Peak, 15,000 feet in altitude, and seen at a distance of 100 miles from its base, is a prominent object. This peak beetles over the plains, protruding out to a promontory from the Cordillera, with which it is engrafted by an elevated ridge. From the northern flank of this ridge descend the waters of the South Platte, which, first forming the Parc of the Bayou Salado, flow out into the Plains to the north-east; from the southern flank descends the Arkansas, which defiles by a cañon, and issues forth into the Plains towards the south-east. The Cordillera, from whose eastern flanks both of these rivers descend, curving towards the east, divides asunder the waters of the two great rivers, the Arkansas and the Rio Bravo del Norte. From the western flank of the Cordillera, opposite to Pike's Peak, protrudes similarly an immense mountain promontory toward the south; this is the Sierra San Juan, the local name given to the northern culmination of the Sierra Mimbres.

The Sierra Mimbres, departing from the Cordillera, under the 39th degree of latitude, traverses diagonally athwart the Table Lands, having a due southern course. It joins the Andes in the Mexican State of Durango, in latitude 23° 30'. Its course coincides with the 109th meridian. It is 1200 miles in length. It is a continuous mountain mass, dividing the Rio Bravo del Norte from the great Rio Colorado. The immense basins of these rivers rest against it as a backbone. The Sierra Mimbres is a

mountain chain of the first order in length, massiveness, and altitude. It is entirely within the area of the Plateau of the Table Lands. It abounds in volcanic phenomena and pedrigals of lava. Its eastern flank is scored by cañons descending to the Del Norte; its western flank by the affluents of the Cordillera. The variety and grandeur of its geological features and metalliferous qualities surpass all other mountains. It produces the precious stones. Within the States of Chihuahua and Durango its flanks are mined for silver, and contain twenty-one known deposits of that metal, which for three centuries have supplied the silver and silver coin to the world. But the labors of the Spaniards have not penetrated beyond the Gila river. It is the portion north of this river and within our territories which is most interesting.

Throughout the whole system of the Andes, it is upon the plateaux and high mountain flanks that mining is profitably pursued. Such is the fact in Chili, Peru, Brazil, and Mexico. It is upon the Plateau of the Table Lands within our territories that the metallic resources chiefly abound. Of the whole system, then, of primeval mountains, occupying the western half of the New World and uniformly auriferous, it is where the mountain summit spreads out to embrace the prodigious expanse of the three contiguous mountain basins of the Del Norte, Colorado, and Salt Lake, that the internal volcanic powers of the globe exhibit their effects upon the most stupendous scale. From this pedestal, having an altitude of 7000 feet, rise the two bisecting mountain-chains of the plateau, the Sierra Mimbres and the Sierra Wasatch, by which it is subdivided into these three specified elevated basins. This immense expanse of continent, presenting a uniform mass of the elevated auriferous rocks, places the equally grand abundance of the precious metals beyond conjecture and above doubt.

But the Rio Colorado having gathered into its one channel the large rivers within its basin, namely, the Rio Verde, the Rio Grande of the West, the Eagle, Dolores, and San Juan rivers, launches its whole force against the interior flank of the Northern Andes, perforates this Cordillera by a cañon, tunnelled diagonally for 450 miles through the very roots of the mountain mass, and reaches the ocean at the head of the Gulf of California. It is this solitary fact in physical geography, new to human research, and of transcendent interest, that here arrests and fixes the attention of every mind. The dorsal mass of the Andes, thus perforated through from base to base, and athwart its course, by a river of the first magnitude, is formed, to its snowy summit, of the upheaved auriferous and igneous rocks! Nowhere else throughout the globe has nature waged so stern a conflict, nor are similar phenomena elsewhere seen. Upon the other continents, great rivers are seen descending from the flanks of primeval mountains, and gorging their outflanking spurs; here only is this universal law of nature defied, and the arcana of the inner world revealed, surrounded by details of the austere sublimity.

Such is one of the stupendous novelties of our own mountain formation, which arrests the attention and summons the enthusiasm of science and the energetic ambition of our people. Nature here abounds in a vast variety of formations, each upon the same miraculous scale, and all sublime. Volcanoes, whose flames and eruptions appear to have ceased but yesterday; immense plains of selenite, fringed with fantastic mountains, called *cristones* (pendent cockscombs); *mesas*, surmounted by prairie plains of wonderful fertility; vast regions of forest upon the irrigated mountain flanks; crests of perennial snows; *parcs* of secluded and romantic beauty, having a perpetual verdure, and the temperature of perpetual spring; cañons, incaged by perpendicular mountain walls of roseate sandstone, wrought by corrosion

into every form of sculpture; mountains permeated with broad veins of gold and silver; others having emeralds and the ruby; quicksilver is known to gush forth and deposit its globules in the rough meadows, called "*siennekas*." Thermal streams of all varieties of sanatory waters burst, as subterranean rivers, from beneath the overhanging peaks and *mesas*; mountains of porphyry and of rocksalt are numerous; vast mountain chains of carboniferous limestone, changing through all varieties of the richest marbles; iron is found in mountain masses; copper is scarcely less abundant. Petrifications, obsidian, cornelians, agates, and chalcedony pave immense regions. Fuel of coal develops itself in beds of unrivalled extent, depth, and compactness; caves sparkling with transparent frescoes of crystallized selenite. An abundant flora of the most delicate forms, colors, and fragrance; a perennial pasturage, overrunning the mountain flanks and summits, on which millions of aboriginal cattle subsist round the year, as fish within the sea; a fat fertility in the soil, at once uniform and universal. Rivers, streams, and fountains, absolutely infinite in number and of miraculous convenience and distribution.

Over all this nether world, so chequered with a gorgeous variety of forms and productions, both upon the surface and beneath, floats the aerial atmosphere, shining with a perpetual splendor unknown in regions of less altitude and less remoteness from the sea. Dry, tonic, and exhilarating to the taste, infused with the direct solar warmth, filtered through the ether that surmounts the atmospheric vapors, the embalming atmosphere tints all nature with a silvery splendor, constantly shining, and constantly serene. The nights have an opposite, penetrating coolness when the solar rays are withdrawn and his direct beams are quenched; the canopy of resplendent stars has a parallel sub-

limity with the day; the transparency of the atmosphere and its serenity are the same.

Electric storms, short in duration and at long intervals, periodically renew the irrigating snows upon the mountains, refresh the air, temper its dryness, and restore the rivers.

Why these basins and sierras of the Plateau should be especially metalliferous, becomes evident by reference to a few radical principles of geological research. If quicksilver, water, oil, and alcohol be poured into a hollow pillar of glass, these liquids will subside, according to their specific gravities, into layers in the above order; if gold, iron, wood, and feathers be thrown in, they will similarly sink, the gold to the bottom, the iron to the quicksilver, the wood to the water, the feathers to the oil. If this column becomes solid by congelation, the same arrangement will remain, the gold being sedimentary to all, the iron beneath the stratum of frozen water, the wood beneath the oil. Everybody is familiar with the manufacture of shot; each globule of liquid lead precipitated through the air, is formed by gravity, into a sphere. The globe of the earth, 8000 miles in diameter, is similarly formed, the congealing substances arranging themselves, as the shells of an onion, from the centre outward, according to their several specific gravities. I have often boiled rice in an open camp-kettle, when traversing the mountains and my daily march was done; the rice finally subsides in mass to the bottom, but the water remains of a milky whiteness. This whiteness is caused by minute, buoyant particles of rice, of altered specific gravity, suspended throughout the water; congelation into ice fixes in solid form both the mass beneath and the suspended particles. This homespun illustration makes clear the cause of the diffusion of grain-gold throughout the auriferous rocks. To be found in mass and in position, it must be sought sedimentary, beneath these rocks. All that we have as yet found is granular, in scales

or minute lumps, set free from the upper rocks by disintegration or corrosion, and descending the mountain flanks with the sands abraded by the torrents.

But we have seen that the Cordilleras and the Sierras of the Plateau are formed of the auriferous rocks broken from their horizontal beds and the edges vertically upheaved some two or three miles in altitude; moreover, the Cordillera of the Andes is gorged athwart its roots by the cañon of the Rio Colorado. Is it not, then, possible—even probable—that sufficient exploration may here reveal to the miner the precious metals in mass and in position?

The scientific writers of our country adhere with unanimity to the dogmatic location somewhere of "a great North American desert." Travellers under their promptings, especially search for it. It has been located *seriatim* in advance of the settlements, in Kentucky, in the North-west, in Missouri, upon the Plains, in California. No explorer or witness who has failed to find a desert, is allowed credence or fame. Yet there is none, either in North or South America; nor is the existence of one possible. On the contrary, the least fertile portion of our continent is the *silicious* maritime slope of the Atlantic States, whose climate is also the most inhospitable. Yet here is no desert, and none anywhere else exists. This dogmatic *mirage* has lately receded from the basin of the Salt Lake; it is about to be expelled from its last resting-place, the basin of the Colorado.

The anatomy of a dwarf or an infant is identical with the anatomy of a giant. The details and relative proportions are the same. Habituated to a common medium standard, it is the size which is marvellous to us. Our senses are bewildered by the novelty; our judgments wander—but the object seen is a reality. To antiquity—even to the modern day of COLUMBUS—the Atlantic Ocean was a mysterious abyss, an impenetrable Tartarus.

By degrees the field of the eye expands, the mind dilates, fact by fact is surmounted, as an acclivity is made easy by a stairway. The *mirage* is dissolved, the higher standard is reached, grows familiar, is approved, and is firmly embraced.

It is to European minds that we owe the as yet elementary sciences of physical geography and geology. The founders of these sciences have reared them by hiving the slowly-developed details of nature, collected by exhausting patience within the small basins surrounding the cities of their residences. Thus, within the small basins of the Thames, the Seine, the Arno; upon the flanks of the Alps, the Apennines; in Calabria, and around Fingal's Cave, have heretofore been found the most popular illustrations to nurse the infancy of these sciences. More than sixty years of intense meditation has inspired the cosmopolitan genius of HUMBOLDT to scan the terrestrial globe with an expanded vision. He only has spoken worthily of America to her own people. In him we recognise the intrepid pioneer who invites us to understand the gigantic proportions of our own great country, its order, its symmetry, and its grand simplicity of configuration. As Columbus led forth navigation and commerce, from its lengthened tutelage in the Mediterranean Sea, to expand itself over all the oceans and to every continental and every island shore; so now, this venerable pioneer of physical science and the arts, marshals us on to penetrate the *arcana* of the land, to fit society to the broad foundation of the continents, and rear a comity of civilization coequal with the globe. It is in Europe that COLUMBUS and HUMBOLDT have had their nativity and their residence. It is for America that they have lived; to us they belong; apostolic citizens of our destiny!

The area of the apartment of the Plateau of the Table Land, embracing the three elevated basins of the Salt Lake, the Colorado, and the Rio Bravo del Norte, is equivalent to France,

Austria, Switzerland, and Cisalpine Italy combined; its rivers are equal to the Danube, Rhine, Rhone, and Po; its metalliferous mountains are pre-eminent in bulk, number, and grandeur. In readiness to receive and ability to sustain in perpetuity a dense population, it is more favored than Europe. Fertility of soil of the highest order, is the dominant and uniform characteristic of this immense region. The mountains are rarely abrupt or rugged. They are surmounted by *mesas*, descending by gigantic terraces called *mesillas*. The densely crystalline primeval rocks yield but slightly to atmospheric corrosion in the regularity of a continental climate and seclusion from the sea. It is the decay of lava, selenite, and carboniferous limestone that forms the soil. The pastoral fertility is developed by nature, which sustains its aboriginal herds as fish in the rivers and in the sea. The arable fertility needs the care of man, and awaits the economical development of artificial irrigation. For the reception of this system, the whole structure and contour of the surface is fitted, and the natural waters abundant.

Reflection will recall to memory the magnificent empires of people, possessing a highly-advanced, but imperfectly-organized, civilization, found established along the summit of this Plateau, conquered by CORTES, ALVARADO, and PIZARRO. On the summit of the Southern Andes, in Chili, Peru, and around Quito, on the Northern Andes, in Central America, and Mexico, dwelt twenty millions of population in the aggregate. Three centuries of subjugation have dwarfed this aboriginal people to one-half of their original numbers, and radically altered their religion, their language, and traditional manners. They have touched the lowest point of decadence, from which they will again slowly ascend. This people had no fixed science in physics, religion, or politics, to prop and protect their system from the shocks of time; no navigation, no principle of perpetuity. These have now come to

them with the European column, bringing with it the ark of regeneration. The peculiar agricultural and social system of the Mexicans under the Montezumas, extended up the basin of the Rio Bravo del Norte to the base of the Sierra San Juan. Our people are marching to the same point from an opposite direction, bringing with them the social habits of the isothermal zone and a maritime climate.

I have spoken of this remarkable focal culmination of the Sierra Madre, from which two snowy promontories protrude, back to back; Pike's Peak to the north-east beetles over and subsides into the Plains; the Sierra San Juan, to the south, beetles over the Plateau, and subsides into the Sierra Mimbres. Radiant mountains and streams diverge from this point in every direction, and form abundant passes, direct and practicable, to and fro, between the basin of the Mississippi and the Plateau. The three remarkable *parcs*—the Middle Parc, the Bayou Salado, and the Bayou San Luis—all approach close together the dividing crest of the Sierra Madre, over whose summit they immediately communicate.

I know not how adequately to delineate this knotted group of all the colossal elements of nature. To submit the unembellished facts is all that is necessary, were this possible, where the elements in compact contiguity are so many, so varied, and each of such colossal grandeur. To exaggerate is far from my intention; to enumerate the details of nature, as I have seen them, with austere simplicity, is my aim.

Behold, then, to the right, the Mississippi Basin; to the left, the Plateau of the Table Lands; beneath, the family of *Parcs*; around, the radiating backs of the primeval mountains; the primary rivers, starting to the seas; a uniform elevation of 8000 feet; a translucent atmosphere, a thousand miles removed from the ocean and its influences; a chequered landscape, in which no

element of sublimity is left out; fertility and food upon the surface; metals beneath; uninterrupted facility of transit! Behold the sublime panorama which crowns the middle region of our Union, fans the fire of patriotism, and beckons on the energetic host of our people. The American people number thirty millions in strength. Two millions change annually their place of residence. The oracular instinct of conquest burns in every heart; this is the continental mission of '76, proclaimed from the traditions of Jamestown and of Plymouth Rock, and thence bequeathed to posterity!

While I write, the news arrives that the column of pioneers (engaged during three years in planting the State of the Kansas basin) has passed over the rim of the Calcareous Plain, and debouched upon the base of the primeval mountains. Gold is found at the first trial and upon the threshold at Cherry Creek, upon the eastern flank of Pike's Peak. A single season will suffice for them to ascend, by the Arkansas and the Bayou Salado, to the mother crest of the Cordillera, whence the basins and sierras of the Plateau expand beyond:

"The clouds above us to the white Alps tend,
And we must pierce them; and survey whate'er
May be permitted: as our steps we bend
To that most great and growing region, where
The earth to her embrace compels the powers of air."

Let us here pause to reflect whether the traditional history of our race does not, on its very front, illustrate what prominence awaits this longitudinal Plateau of our continent, descending thus by terraces into the Mississippi Basin on the east, to the Pacific Ocean on the west! The existence of the empires of Montezuma and the Incas exhibits upon these Table Lands the only examples where our aboriginal people rose above an absolute

barbarism, elsewhere upon the lowlands as universal and as level as the waters of the sea.

All around the head of the Mediterranean, where it penetrates the Asiatic continent, this basin is encircled by a plateau, or amphitheatre of elevated plains extending round from Suez, continuously through Syria, Asia Minor, and into Greece. This descends by terraces to the sea shore. Upon this Plateau have been, among others, the cities of Babylon, Palmyra, and Damascus; upon the slopes to the sea, Alexandria, Tyre, Jerusalem, Tarsus, Byzantium, and Athens! What cardinal element have we, in the immense mental system of our civilization, which has not come to us and with us from thence? Hence (from the Plateau of Syria) have resounded through all time and into every heart, the direct oral teachings of Jehovah and of Jesus: hence have issued forth the miraculous alphabet and the numerals: hence have come the cereals and animals of our agriculture, wine, and fruits: hence our religion, law, social manners, history, music, poetry, and arts: from hence, as from the cradle of nativity, have issued forth for our inheritance, to abide with us for ever, "the unconquerable mind and freedom's holy flame!"

Everybody is acquainted with the Gulf Stream of the Atlantic Ocean. This colossal stream, recoiling round the circular sea of the tropics, and receiving the oozy sediment of the Amazon, the Orinoco, the Magdalena, and the Mississippi, launches out into the middle ocean. Its silent current rolls the tepid waters and sandy *débris* of two continents a thousand leagues along the bottom of the ocean, to bank them up upon the margin of the Northern Sea, to form the submerged continent of Newfoundland, and the telegraphic plateau. Similarly has flowed, for fifty centuries, along the *isothermal* axis, the human current, which bears with it the immortal fire of civilization revealed to man. This central current has reached the Plateau of America, up

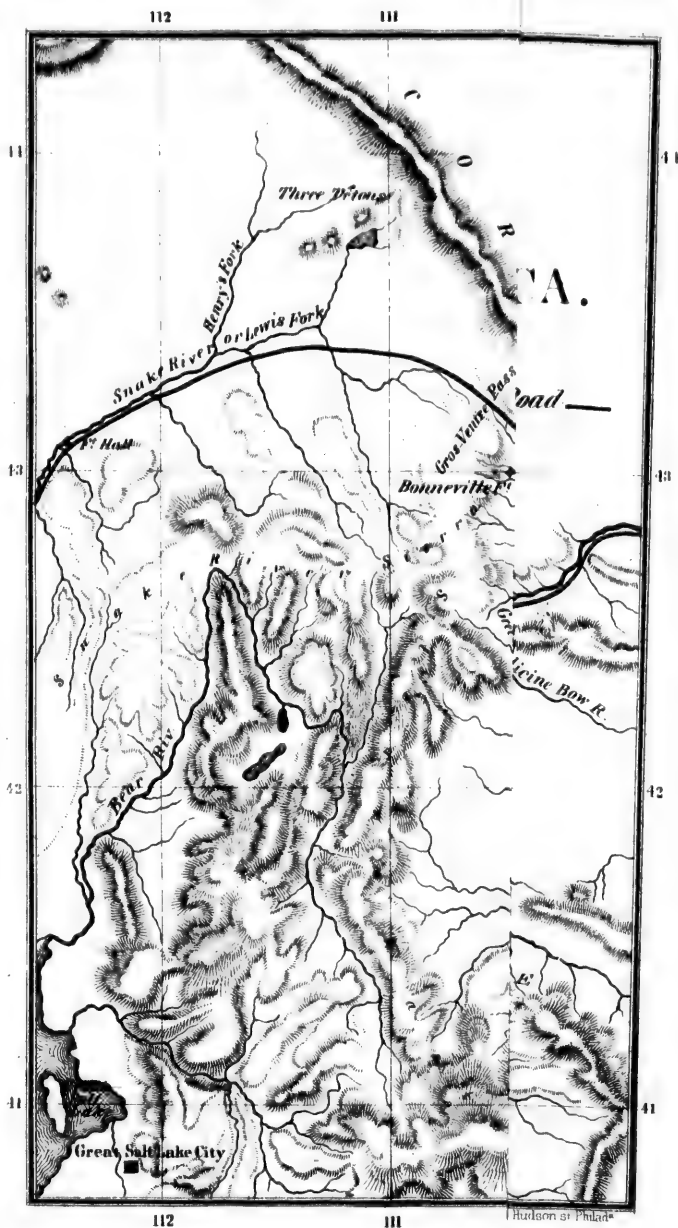
which it will ascend to plant the sacred fires over its expanse, and shine upon the world with renewed effulgence. Such is the era, the arrival of which is announced to us by the development of the gold production in the interior, domestic region of our continent.

CHAPTER VIII.

THE SOUTH PASS OF AMERICA.

FROM the previous chapters, it will be perceived that one who travels from Paris to Peking, by the direct route of New York, Independence, and Astoria, traverses these physical divisions: 1st. The Atlantic Ocean. 2d. The Atlantic Maritime Slope. 3d. The Alleghany Mountains. 4th. The Basin of the Mississippi. 5th. The Cordillera of the Sierra Madre. 6th. The Plateau of the Table Lands. 7th. The Cordillera of the Snowy Andes. 8th. The Pacific Maritime Slope. 9th. The Pacific Ocean.

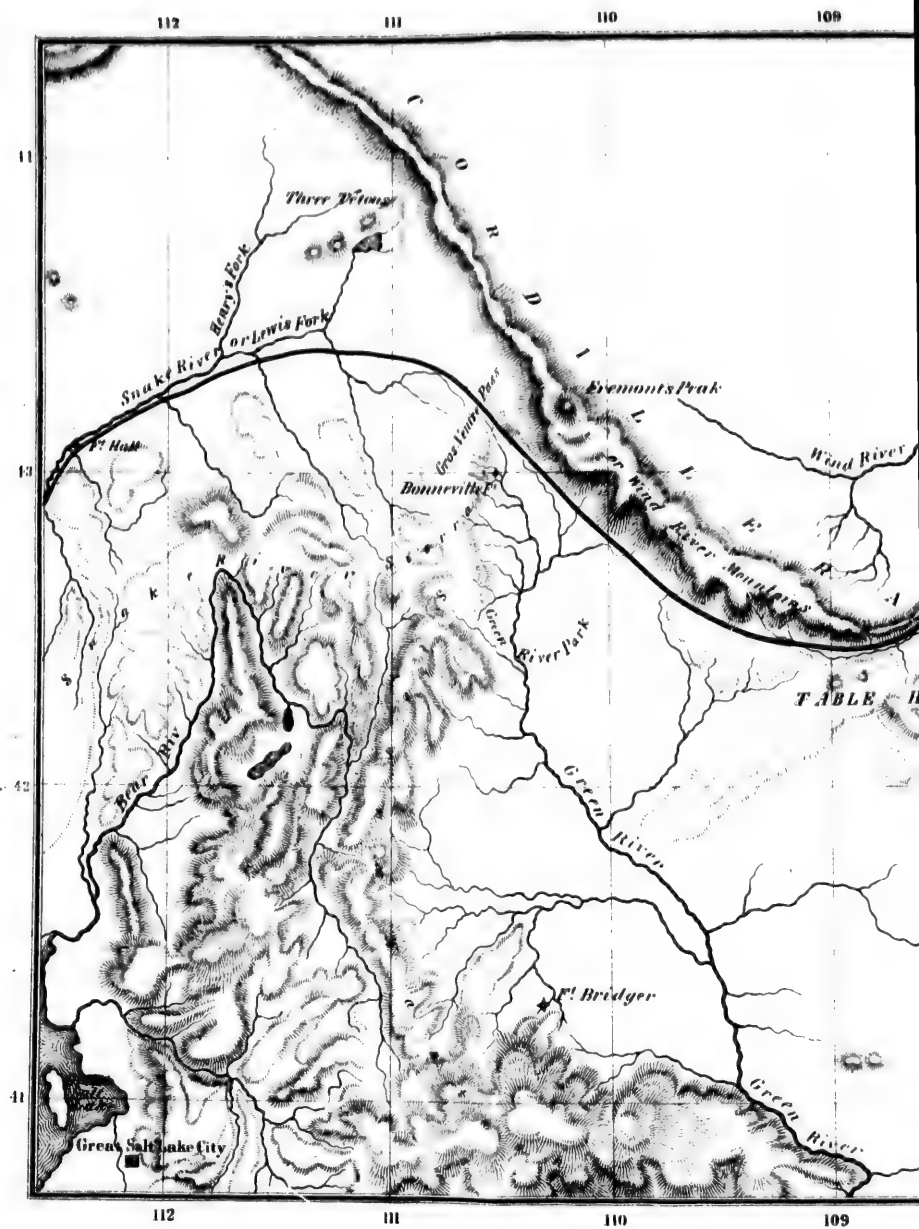
This route brings into immediate juxtaposition the great permanent reservoirs of human population and activity—*Western Europe*, *America*, and *Oriental Asia*. If it be practicable to accommodate all the international transportation of the *three* continents by this route, a prodigious condensation of economy in the interchanges of the products and people of the world will be accomplished at a blow. The distance of transit will be reduced from the circumference of the globe to the length of its diameter—the time to one-tenth. Steam by sea and land will form an uninterrupted trip by two ocean ferries, connected by a transit



railway. Thus will be solved the geographical problem which has agitated the world before and since COLUMBUS.

Practical experiment has exhausted all discussion as to the passage of the two oceans by steamers, and of the American continent by railway, so far as the Atlantic Maritime Slope, the Alleghany, the Basin of the Mississippi, up to the wall of the Cordillera of the Sierra Madre, and the Pacific Maritime Slope, are concerned. Serious arguments of any difficulties within these divisions of the whole distance are settled and have ceased. All that remains enigmatical to the public mind, and unresolved, is the interval occupied by the Cordillera of the Sierra Madre, the Plateau of the Table Lands, and the Cordillera of the Sierra Nevada, which conjointly form the "mountain formation of North America," extending continuously from Tehuantepec to the Arctic Sea. How this complicated barrier of immense mountains, 1000 miles in breadth, is to be surmounted, is now obtaining its illustration by the establishment of the Mormons in Utah, and the military expedition sent against them. It is by the South Pass, which is the gateway of the American people and their commerce to Asia, and the *only one*, as exclusively as is the Strait of Gibraltar that of exit out into the Atlantic, to the nations of the Mediterranean, now and in all ages passed.

There exists between the Basins of the Mediterranean and of the Mississippi, a perfect identity in position, physical characteristics, historical prestige, and social concord. A comparison of the one with the other will furnish a luminous illustration, to explain the present generation of the American people to itself, and to guide all future generations. The area in square miles of these two basins is the same. Four-fifths of the surface of the *former* is occupied by the salt-water expanse of the Pontic, Propontic, Adriatic, and Mediterranean Seas, into which flow the Danube, the Nile, the Po, and the Rhone, rivers having narrow



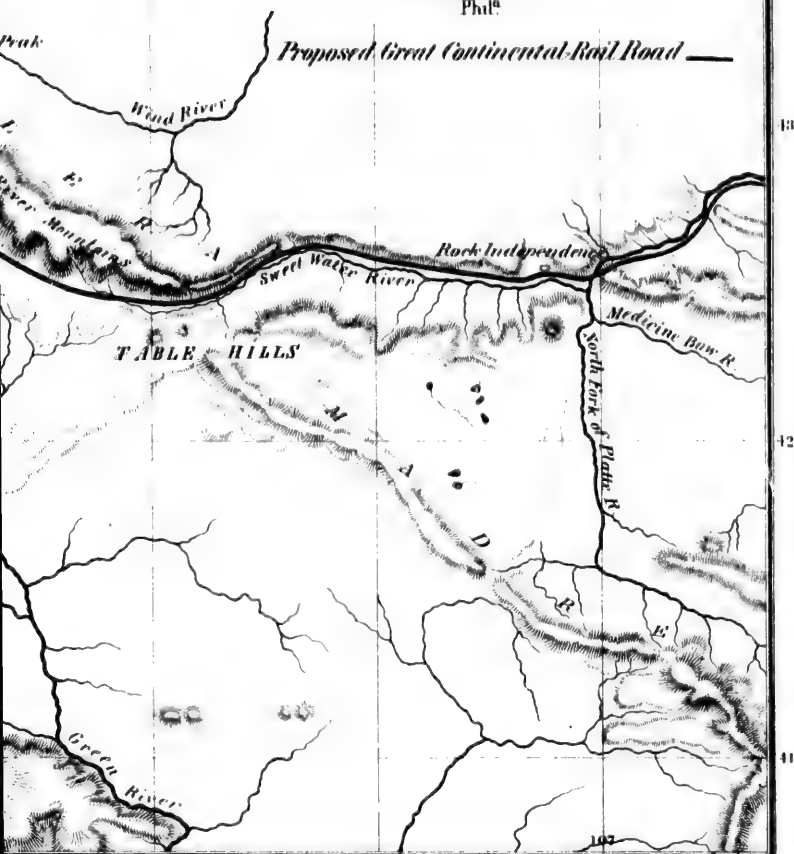
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MAP
OF
the SOUTH PASS of
NORTH AMERICA.

Sower, Barnes, & Co
Phil^a



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Printed by S. W. Parson, 11th, 3d Harrison St. Philad^a

valleys and imperfect navigation ; protruding out between these seas are the peninsulas of Asia Minor, Greece, Italy, Spain, and the African coast, all filled full with mountain vertebræ, rugged and poorly adapted to agriculture. The sea surface is stormy and dangerous to navigation, the rivers are short and deficient in channel, the shores are impracticable to land except where harbors are constructed, and the inhabitable lands arranged in rugged and isolated masses. Yet, from the first pioneer voyage of Hercules down the Mediterranean, to the Pillars which still immortalize his energies, to the present age, there has existed a certain imperfect compact in the political, social, religious, and commercial relations of the people of the Mediterranean. The vestal fire of civilization has never been entirely quenched. It has spread out to illuminate the whole area, both under the political system of the Roman Empire and the religious system of the Roman Church. It has overrun the brim, and is inherited by the modern European nations, who are the dispersed progeny of Rome.

The "Basin of the Mississippi" fills more perfectly the temperate zone. The counterpart of the salt-water surface is a delicious, undulating plane, everywhere channelled by rivers navigable to their very sources : navigation is everywhere as safe and constant as upon a canal ; the line of accessible shore is in length absolutely infinite ; the soil is uniformly calcareous, arable, of inexhaustible fertility, and sufficiently irrigated from the clouds ; no mountain, no sheet of water, no swamp is anywhere found to break the uniform productiveness of this immense expanse ; no rapids to interrupt the universal navigation of the rivers.

Europe is bisected by a broad mountain chain traversing it continuously from Gibraltar to Siberia, under the names of the Pyrenees, Alps, Carpathians, and called by the Romans "*divor-*

tia aquarum" (the divide of waters). What, therefore, is outside of the Basin of the Mediterranean is, for the most part, in the inhospitable "Basin of the Baltic," its climate and general features not unlike Labrador.

All along the northern front of the "Mississippi Basin," expand beyond an imperceptible barrier, the "Basins of the St. Lawrence and Saskatchewan," similarly calcareous, similarly abounding in navigation, and only moderately inferior to it in fertility, in geniality of climate, and in area.

The surface, then, of the European Basin is salt-water and mountainous. That of the American Basin a plain of calcareous, arable soil. The former has a *maritime* climate, the latter a *continental* climate, superior in dryness and salubrity. The former has a restricted and dangerous, the latter an abundant and safe navigation. In land-transportation the contrast is still more strikingly diverse and favorable to the Mississippi.

The Basin of the Mediterranean, under the rule of the Roman Emperor TRAJAN, attained a population of *one hundred and thirty-one millions*. This was then chiefly congregated in the eastern half; it is now in the western half, in which direction the *pressure* always preponderates. At present the Basin of the Mississippi contains twelve millions of inhabitants. It will conveniently sustain *twelve hundred millions*. *This is now an immense empire*. Comparisons drawn from history or existing empires, are very feeble illustrations of what is to grow up on this already radicated foundation. All the features of nature, all the principles of progress, social and political, are here *original*; this undulating plain, uniformly and universally calcareous; this circular configuration, running flush out to the repelling lines of the Arctic and Torrid Zones; this miraculously-balanced variety of temperature, climate, prairie, forest, land, rivers, rain, and sunshine, minerals and contiguous expanses, now arable and now

pastoral—all these constitute an original order of physical facts, simple and symmetrical, but sublime. The rising of consecutive States out of the wilderness, erected by spontaneous industry; the unabating deluge of men daily pouring forth and daily pushed onward by the hand of God; the rushing march of empire; the profound internal order and systematic economy which pervades and guides this mass, more numerous than many armies; the instinct of discipline and self-government everywhere felt and always obeyed; no central military or religious power anywhere seen—all these array themselves to announce the presence of principles and power intensely original and intensely potential in social and political influences.

Memory will suggest how slow and narrow, until quite modern times, has been the column of organized civilization on the old continent. The whole African coast of the Mediterranean is socially semi-barbarous, and has been so uniformly since the deluge. Upon and beyond the Danube its permanence is quite recent and its light still crepuscular. Contrast the elements of society and their history, filling the face of Europe from Gibraltar to Norway, with that of America from Cuba to Hudson's Bay, both fronting to the west! In the former appear distracting nationalities, domestic force and fraud, no systematic union, no moral harmony, no uniformity of races, no intelligent concord in religions. In the latter is a compact front, where all these elements reversed are blended in civic concord, fired by a common hope, inspired by one destiny, and having one God, one heart, one aim, and one supreme ambition.

Such are the characteristics of the two basins, contrasted the one with the other. They both slope to the Atlantic Ocean, and are face to face. In the mythological history of Hercules we read the first intelligent record of that struggle for dominance over the Mediterranean, which has been ever since a drama of

uninterrupted acts. In this drama appear the tragic sieges of Troy, Tyre, Athens, Carthage, Alexandria, Byzantium, Rome, Rhodes, Gibraltar, Malta, and Sebastopol; among a thousand combats by sea and land the naval victories of Salamis, Actium, Lepanto, Aboukir, and Trafalgar. From history, which is the narrative of this struggle of four thousand years, is apparent the perpetual incubation of military brute force always in the majority; civic virtue and municipal independence as uniformly in the minority, checkered by heroic resistance and perpetually-recurring martyrdom. It has been the design of the American *continental* republic, from its first colonial origin, to reverse this doom; to elevate civic concord to the administration of political power; to sustain it there; to dispense with the whole scheme of military despotism without respect to its antiquity, its arrogance, or the heretofore universal success of its subtle union of hypocrisy and force; to inaugurate for mankind a code of political practice, which shall bring the science of government into accord with the divine code of morals and religion, cradled 1860 years ago in the manger of the stable of Bethlehem!

This mission of civic empire has for its oracular principle the physical characteristics and configuration of our continent, wherein the *Basin of the Mississippi* predominates as supremely as the sun among the planets.

The Basin of the Mediterranean is then a surface of *barren sea*, with mountain masses, imperfectly fitted for population, protruding above it; that of the Mississippi is a calcareous plain of *land*, everywhere interlaced and ramified with navigable arteries. Both are traversed centrally by the *zodiac* of empires within which the current of civilization has flowed in all ages from east to west. This current, descending the Mediterranean, and drawn in by the converging continents of Europe and Asia, pours forth its whole concentrated volume through the supreme pass

known now and in all ages as the "*Pillars of Hercules*." What is accomplished by this convergence of the continents of the old world, in reducing all the outlets of navigation, and consequently of all commerce, to the single Pass of Hercules, is still more absolutely accomplished for our continent by the "Mountain Formation." This is the South Pass of North America, the exact equivalent *single* pass, in our continent of *land*-basins, to the *water*-pass of Gibraltar among the *water*-basins of the African hemisphere. The latitude is $42^{\circ} 24'$, the longitude $109^{\circ} 26'$. This is the same latitude as Boston, Bayonne and Marseilles, in France, and of Trieste and Constantinople.

To delineate the features of the South Pass, so that the topography of the plain, the prodigious sierras which surround it, the rivers radiating out of it, and the gorges by which they commence their gentle declinations to the seas, may all be grouped in one *glance*, as a portrait in daguerreotype, is not easy to be done. The plain is elevated 7500 feet above the sea; it is beyond or *west* of the Cordillera; its surface of clay is so absolutely smooth as to admit of uninterrupted vision, as over water; it is in shape a triangle, having very acute angles at the northern and southern points, and one very obtuse at the source of Sweetwater, which is the eastern point. The western side, 200 miles in length, corresponds with the bed of the Rio Verde (Green river), running directly from north to south, to which the whole plain slants; immediately along its western bank rises the *Sierra Washatch*, forming a continuous mountain barrier towards the west; opposite the centre of this hypotenuse is the gorge of Sweetwater enveloping the eastern point of the triangle; the remaining sides extend hence, the one to the north-west, the other to the south-west. Along the former, in length 109 miles, rises the stupendous mass of the Cordillera, known here *locally* as the "Wind River Mountain;" along the latter a similar mass of the

Cordillera, but of inferior altitude, known *locally* as the "Table Mountain." The area of the Plain of the South Pass is about equivalent to that of New Jersey. Its surface is of clay, resembling kaoline, of which porcelain is made, and has the absolute smoothness of that material filtered through water and compacted by pressure. From the three angles of its rim issue the Sweetwater, flowing east into the Platte and to the Atlantic; the Snake river, flowing north-west to Walla-Walla, and thence with the Columbia to the North Pacific; and the Rio Verde, south into the Bay of California; by whose western affluent also, Black Fork, exists the easiest egress into the Basin of the Great Salt Lake.

Most probably no spot on the globe has grouped into one view so much of intense grandeur in the variety and number of its physical wonders. From a single ice-crowned summit of the *Wind River* Mountain are seen the gorges of the Missouri, Yellowstone, Platte, Colorado, and Snake rivers, all radiating from its base, and each the equal of the Danube in length and the volume of its waters. Five primary chains of snowy mountains here culminate together to this central apex, from which they radiate out between the rivers; the dorsal mass of the Cordillera reaching towards the north to the Arctic Sea, and towards the south to the Antarctic; the Sierra Wasatch, the Snake river chain, the Salmon River Mountains, all crested with snow, and each having an unbroken length of 1000 miles.

The South Pass is 1400 miles from Astoria. It is the same distance from St. Louis. It is, then, in the middle region of the continent. It is the *only pass* through the "Mountain Formation" from hence as far as the Isthmus of Tehuantepec. From this comes the name South Pass, as being the most *southern pass* to which you may ascend by an affluent of the Atlantic, and step immediately on to a stream descending uninterruptedly out to

the Pacific. This name is as ancient as the Pass itself. Into it concentrate the great trails of the buffalo—geographers and road-makers before the coming of man. The Indian, the Mexican, and the American, successors to one another, have not deflected from the instincts of the buffalo, nor will they, whilst the primeval mountains last in their present unshattered bulk. This is the continental highway of the people, through which *exclusively* millions have already poured to and fro with their children, their free principles, their cattle—assembled in caravans, on foot, and mounted—with wagons, hand-carts, knapsacks, and bringing with them their household gods, and the tabernacle of civil and religious liberty.

The South Pass is the *only and exclusive continental pass*. The outlet at the eastern angle is known as the gorge of the Sweet-water river, which descends to the Platte; that at the northern angle as the gorge of Grosventre river, which descends to the Snake river. These are both short and slender mountain streams, accomplishing their descent in beds of the extremest sinuosity, but without abrupt waterfalls. They both flow from chasms in the flanks of the immense mass of the Wind River Mountain, which here forms an arc fronting to the west, and issue out upon the plain. But the plain is traversed by a gentle divide, parallel with the mountain base, and no more distinguishable than the bevel given by engineers to any ordinary street. Against this these two streams are deflected into opposite courses, the former to burrow its way around the arc of the mountain to the south-east, the other towards the north-west. To one who observes this from the plain, there is presented a similar miraculous configuration of the land, such as displays itself to one who, navigating the Propontic Sea, beholds the Dardanelles upon his right hand and the Bosphorus on his left. Moreover, the sky is without clouds and *rainless*, the atmosphere intensely brilliant,

temperate, and serene, encompassed round by scenery of the austere sublimity. But we have seen that the elevation of the South Pass is 7500 feet, and that Snake river runs *continuously* out of it by the most direct and favorable course, of 1400 miles, to the Pacific Sea, tunnelling consecutively the Blue or Salmon River range of mountains, the Snowy Andes, and all other transverse ranges and obstructions. Here is, then, an uninterrupted water declination through and across the whole "mountain formation," descending by a plane, dipping *five feet* to the mile! From the adjacent eastern rim of the *Plain of the South Pass* runs out Sweetwater into the Platte, which, tunnelling consecutively all the outlying ranges of the Cordillera of the Sierra Madre, forms a similar uninterrupted water declination, in a very straight line of 1400 miles to St. Louis, descending by the same average dip of *five feet* per mile. Everybody is familiar with the existing railways which, radiating from St. Louis and pursuing continuously the plains of the Ohio and St. Lawrence, outflank the Alleghanies between Syracuse and Rome, and descend by the Hudson river to New York.

The sciences which delineate and explain to the human understanding the details of matter, as it fits itself in myriads of millions of variegated forms to fill out the supreme order of the universe, develop nothing so interesting to the heart of civilized man as this single sublime fact of physical geography in the supreme engineering of the Creator. This line of gently-undulating river-grades, girdling the middle zone of our Union from sea to sea, in one smooth, continuous and unbroken cord, 3600 miles in length, fitting the isothermal axis of the temperate climates, crossing one river only at St. Louis, and outflanking all the mountains, presents to us the counterpart of that water-line of the Old World, commencing at the extremity of the Euxine,

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passing down the Mediterranean, and debouching out into the ocean.

From the South Pass to Mexico the primary mountain chains spread out. They, together with the great rivers which divide them, are longitudinal, parallel, and unperforated. The rivers grow deeper as they approach the sea, increasing the altitude and abruptness of the mountain flanks, which overlap one another, and increase and complicate the mural barriers. Nowhere, within this interval, are the mountains reduced to a single dividing barrier, nor is there presented anywhere the essentials of a practical pass. Nowhere is to be found a sufficient depression in the mountain crest, nor a continuous gradation from the summit-crest, prolonged to the east and to the west, down both declinations to the seas.

The South Pass is elevated 7500 feet above the seas, from which it is some 1500 miles remote. It has, then, a *continental climate*, whose atmosphere is tempered by the altitude and by the absence of moisture. Hence, an *intense serenity* is the prominent feature, perpetual sunshine, a tonic and salubrious air, a vernal temperature. Along the *continental line* the changes from the continental to the maritime climate, and *vice versa*, graduate themselves with the same delicate scale as the surface slopes. *Uniformity of climate*, from sea to sea, is then so nearly approached, that it actually exists all along this line in absolute plenitude. Human society, in the current course of ages, vibrates to and fro through periods of barbarism. God and Nature endure constantly eternal and perfect. Manners, religions, policies, change and become barbarous or the opposite, as they harmonize with God and Nature. Science develops how this harmony may be known and practised. As we recede from it, turbulent force dominates, numbers are dwarfed, civilization

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withers, liberty is lost: as we approach it, civilization expands, charity smiles, order and empire rise.

Nature here for us, upon our Continent, amidst a stupendous vastness of configuration, preserves an austere simplicity, which guides the instinctive *glance* of empire with unerring certainty. Here is that continental line, the discovery of which mankind has awaited with the keenest curiosity. In the ripeness of time the hope of humanity is realized; it is by this that our people are about to construct the Continental Railway. Like the refulgent girdle with which antiquity bound, in one chorus, the sisterhood of the Graces, we will behold united, by one Zone, the three sister Continents, Europe, America, and Asia.

Here, through the heart of our territory, our population, our states, our cities, our farms and habitations, will traverse the broad current of commerce, where passengers and cargoes may at any time or place embark upon or leave the vehicles of transportation. Down with the parricidal treason which will banish it from the *land*, from among the people, to force it into the *barren ocean*, outside of society, through foreign nations, into the torrid heats, along solitary circuitous routes, imprisoned for months in great ships! This Continental Railway is an essential domestic institution, more powerful and more permanent than law, or popular consent, or political constitutions, to thoroughly complete the great system of fluvial arteries which fraternize us into one people; to bind the *two scaboards* to this one continental Union, like ears to the human head; to radicate the foundations of the Union so broad and deep, and establish its structure so solid, that no possible force or stratagem can shake its permanence, and to secure such scope and space to progress, that equality and prosperity shall never be impaired or chafe for want of room.

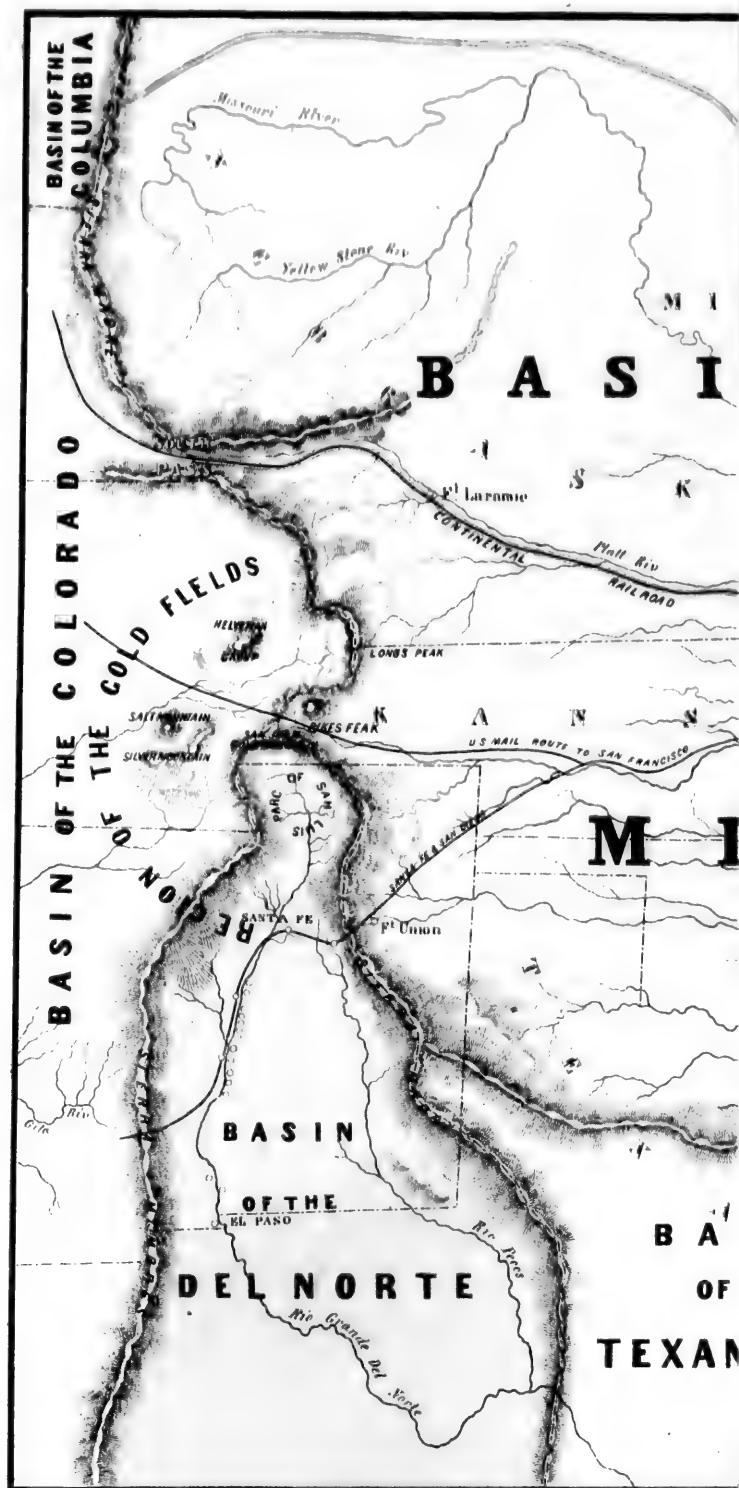
The pious veneration spontaneously awarded by the human heart to men, whose lives exhibit exalted devotion and exalted

success, inspiring and perpetuating in society the "*principle of virtue always in exercise*," has placed Hercules, the pioneer of the system of the Mediterranean, in the number of the immortal gods of antiquity: a constellation in the ethereal canopy diurnally renews his memory, his name, and his actions. Modern times, accepting the tradition, behold it stamped upon the coin of Spain and the Indies, to obtain a circulation as universal and familiar as the human race. Yet the American people pursue the planting of empire, advancing with intense celerity, moving to the front according to a system understood and self-disciplined, marching with the cadence of an army of innumerable legions, uniting in one homogeneous order; with the same energies, a single aim, and rushing to consummate a common destiny. Shining in the front of this marching host, the pioneer and exemplar, "first in war, first in peace, and first in the hearts of his countrymen," appears the form of WASHINGTON, whose oracular wisdom and intrepid constancy inspired the normal councils where its mould was cast, its strategy fixed, and its unalterable mission first inaugurated. Let this name, then, find a monument around whose base the condensed column of progress shall file to and fro during all future ages! Where the summit crest of our continent is found; the focal source of its rivers and its sierras; where the cloud-compelling Cordillera culminates over the "Gateway of empires;" let these commemorate this *name* immortally, while the grass shall grow and the waters run, as firm and enduring as the loftiest mountain. Let the children of the world be taught to say: Behold the Pass and the Pillars of WASHINGTON!

The history of the human race arranges and gauges itself by generations. Thirty-three years are estimated to be the period of control exercised by each generation over the long life of a nation. As each succeeds its predecessor, the work of progress

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is reinvigorated, and fresh power and new conquests accumulate. The present is the *seventy-third* year of the Federal Constitution, and inaugurates the *third* generation of our united people.

The *first* gave to us this sacred Union, and founded our continental Republic. The *second* has filled up the Atlantic half of the continent with states, secured the maritime connections with that ocean and with Europe, and has blazed for us the way across the continent to the Pacific and to Asia. We, the *third* generation, receive from them the pious task to plant states onward to that ocean; to complete the zodiac of fraternal nations round the globe, and to set deep and firm to their outward dimensions the foundations they have laid.

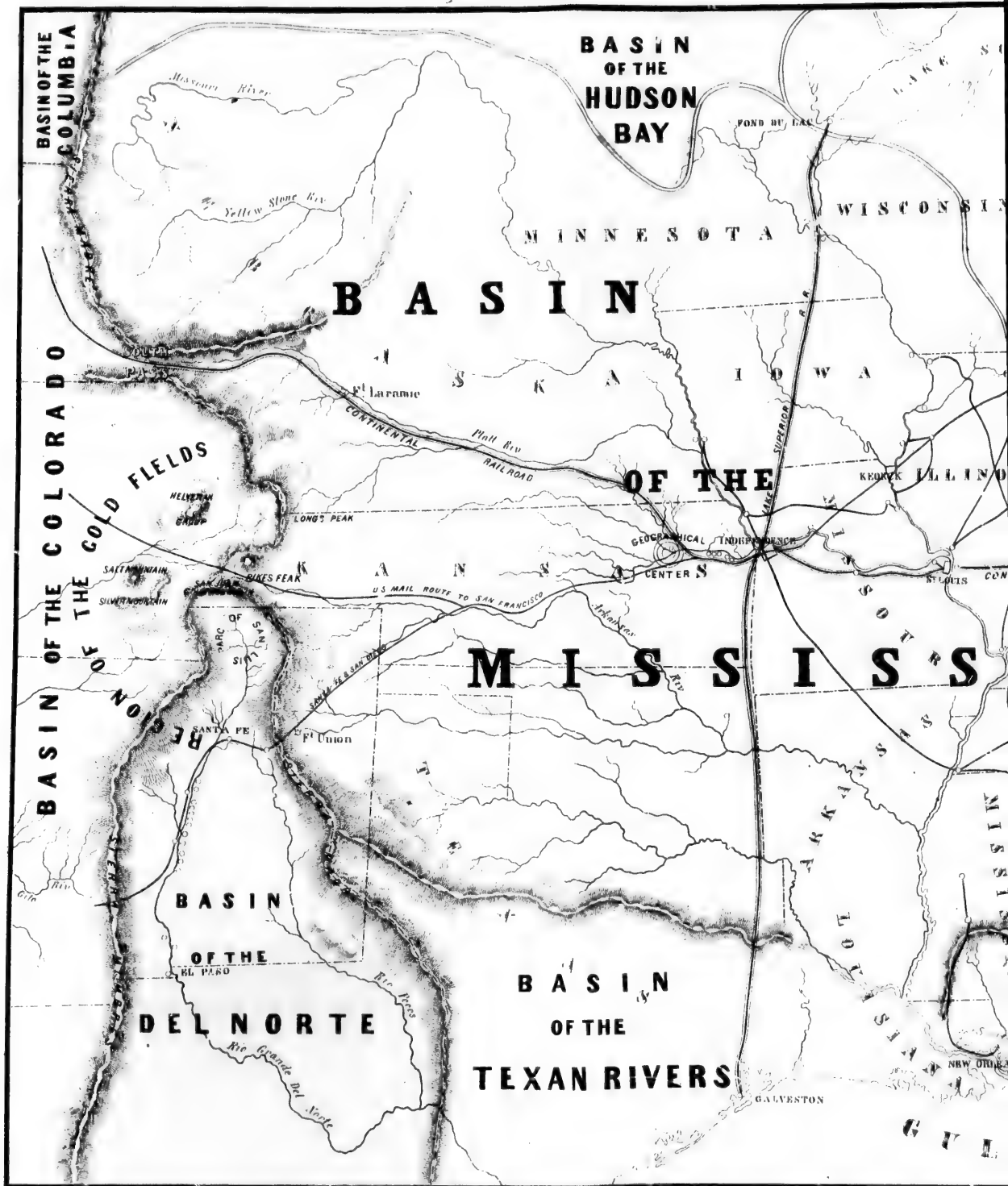
As we assume our task, illuminated by the example of their wisdom, energy, and glory, intent to equal them in the first and surpass them in the rest, may we not repeat this invocation to the luminary of the universe, as he departs to usher in another day:—

“The weary sun hath made a golden set,
And, by the bright track of his fiery car,
Gives token of a goodly day to-morrow!”

CHAPTER IX.

THE GREAT BASIN OF THE MISSISSIPPI.

THE most remarkable feature of America is the Basin of the Mississippi. As yet the popular mind does not clearly comprehend its dimensions, and the understanding of its physical characteristics is indistinct and vague. It is bisected through its centre by a supreme artery, which above St. Louis has received





B A S I N

OF THE

W I S C O N S I N S T L A W R E N C E

M A I N E

L A K E O N T A R I O

N E W Y O R K

M A S S A C H U S E T T S

C O N N E C T I C U T

N E W J E R S E Y

P E N N S Y L V A N I A

P I T T S B U R G

P H I L A D E L P H I A

B A L T I M O R E

W A S H I N G T O N

V I R G I N I A

K E N T U C K Y

S S I P P I

T E N N E S S E E

N O R T H C A R O L I N A

S O U T H C A R O L I N A

B A S I N

OF THE

A L A B A M A R I V E R S

N E W O R L E A N S

G U L F O F M E X I C O

Map

OF THE BASIN

OF THE

MISSISSIPPI

Sower, Barnes, & Co
Phila

1871

the name of the Missouri, and below, the Mississippi river. This is 5000 miles in length, and its surface is a continuous inclined plane, descending seven inches in the mile. Into this central artery, as into a common *trough*, descend innumerable rivers, coming from the great mountain chains of the continent. All of the immense area thus drained, forms a single *basin*, of which the mountains form the rim. It may also be called an *amphitheatre*, embracing 1,123,100 miles of surface. This has been, during the antediluvian ages, the bed of a great ocean, such as is now the Gulf of Mexico or the Mediterranean, above the surface of which the mountains protruded themselves as islands. Gradually filled up by the filtration of the water during countless ages, it has reached its present altitude above the other basins, over which the oceans now still roll, and into which the waters have retired. The "Basin of the Mississippi" is then a pavement many thousand feet in depth, formed by the sediment of the superincumbent water, deposited stratum upon stratum, compressed by its weight and crystallized into rock by its chemical fermentation and pressure. It is in exact imitation of this sublime process of the natural world, that every housewife compresses the milk of her dairy into solid cheese and butter. It is, therefore, a homogeneous, undulating plain of the *secondary* or sedimentary formation, surmounted by a covering of soil from which springs the vegetation, as hair from the external skin of an animal. Through this coating of soil, and into the soft surface strata of rock, the descending fresh waters burrow their channels, converging everywhere from the circumferent rim to the lowest level and pass out to the sea. In this system, which is the same as the circulation of the blood in animal life, the Missouri river and the minutest rill that flows from a garden fountain has each its specific and conspicuous place. Hence the corresponding

order in the undulations, the variety, and the complexity of contour in the surface and in its vegetation.

Such is this vast Basin, whose transverse diameter is 2500 miles, and so simple, homogeneous, and clear is the system of its geology and its waters. The vegetation and climate have the same order of arrangement, and more varied. These vary with the latitude, the distance from the oceans, and with the altitude. The insular site of New York city is upon the bank of the sea, is sixty feet elevated above the sea, and is constantly irrigated by the evaporation coming from the sea; it is in latitude $41^{\circ} 30'$ north. The plain of the South Pass is 2000 miles from the sea, is elevated 7500 feet above the sea, has no vapor from the sea, but an atmosphere rainless and without dew; it is in latitude $42^{\circ} 30'$ north. Such are the contrasts in the elements affecting climate and vegetation. Through the interval between these two extremes Nature changes, from one to the other, by a graduation so delicate and uniform as to be scarcely sensible to a traveller who goes less than the whole distance. Yet, to one who does so, these changes are as palpable upon the face of Nature, as are the diurnal alternations of light and darkness. The timber, the flora, and the grasses indicate the presence and absence of atmospheric irrigation, as palpably as the sun indicates the day, and the stars the night. All that portion of the Mississippi Basin lying between the Mississippi river and the Atlantic, is densely timbered, excepting only a portion of Indiana, Illinois, and Wisconsin; so also are the States of Louisiana, Arkansas, and South Missouri. An irregular line from the head of Lake Erie, running towards the south and west into Texas, defines the cessation of the timber. Between this line and the sea exists a continuous forest region, perpetually moistened by showers from the ocean. Beyond this line, and deeper into the continent, the upland ceases to nourish timber, which is replaced by luxuriant annual

grasses, though narrow lines of forest continue upon the saturated bottoms of the rivers and in the islands. This is the Prairie region of luxuriant, annual grasses, and soft, arable soil, over which the fires annually sweep after the decay of vegetation. The termination of this belt is marked by an irregular line parallel to the first, where the rains cease, and the timber entirely disappears. It is about 450 miles in width, and within it artificial irrigation is not practised, nor necessary, it being everywhere soft, arable, and fertile. To this succeeds the immense rainless region onward to the mountains, exclusively pastoral, of a compactly growing forest coated with the dwarf buffalo grass, without trees, and the abode of the aboriginal cattle. That no desert does or can exist within this Basin, is manifest from the abundance and magnitude of the rivers, the uniform calcareous formation, the absence of a tropical sun, its longitudinal position across the temperate zone, and the greatness and altitude of the mountains on its western rim. The river system of the Mississippi Basin resembles a fan of palm leaf. The stem in the State of Louisiana rests in the Gulf; above, the affluent rivers converge to it from all parts of the compass. From the east come in the Homochitta, the Yazoo, the Ohio, the Illinois, and the Upper Mississippi. From the west, the Red river, the Washita, the Arkansas, the White, St. Francis, and Osage rivers, the Kansas, the Triple Platte, the L'eau qui Cours, and the Yellowstone, all navigable rivers of great length and importance. These rivers present a continuous navigable channel of 22,500 miles, having 45,000 miles of shore, an amount of navigation and coast equal to the Atlantic Ocean.

The area of the Mississippi Basin classifies itself into one-and-a-half fifths of compactly-growing forest, the same of prairie, and two-fifths of great plains. Through all of these the river system

is ramified as minutely complex as are the veins and arteries of the human system.

The population is at present 12,000,000. The capacity for population is indefinite. Comparison will illustrate this interesting fact. Society erects itself into empires in order to arrive at strength, civilization, and permanence. The most perfect example is the empire of the Romans, whose history we familiarly possess complete, of its rise, culmination, and slow decline. This empire occupied and fused into one political and social system the Basin of the Mediterranean, whose area is 1,160,000 square miles. From out of this they never passed, except into the corner of Gaul and Britain, but restricted themselves to the Mediterranean and Pontic Seas, to the Nile, to the Danube, and to the Rhone. This empire, embracing the above area, contained under the Antonines 131,000,000 of population, and Rome itself, in the geographical centre, had a diameter of 50 miles and 10,000,000 of inhabitants! But the area of this Basin is, for the most part, a salt-water waste, into which protrude the peninsulas of Asia Minor, Greece, Italy, and Spain, themselves filled with mountain vertebræ, and also a few islands. Space for habitations and the production of food is, therefore, scarce. The equivalent, with us, of this salt surface and rugged mountains, is, everywhere, an undulating, calcareous plain, uniformly inhabitable and productive. The rivers surpass the sea for the freightage of commerce, and the front of land upon them exceeds the coasts of the oceans in amount and accessibility. The Basin of the Mississippi will then more easily contain and feed ten times the population, or 1,310,000,000 of inhabitants! If the calcareous plain extending to the Arctic Sea, the two maritime fronts, and the mountain formation, be added, and the whole compared to Europe and Asia, 2,000,000,000 will easily find room—a population double the existing human race! This

Basin is all within the Temperate Zone; but upon the shores of the Gulf, at the level of the sea, tropical fruits, flowers, and vegetation are produced. On the high mountain slopes grows the vegetation of the Arctic Zone. Between these are found every kind of agricultural production, as we descend from the extremes to the central medium. In position it is exactly central to the continent. Not far remote from the west bank of the Missouri river, in the bosom of romantic scenery and fertile prairie, is a spot where the Smokyhill and Republican rivers, by their confluence, form the Kansas. This is the geographical centre at once of the North American Continent, and of the Basin of the Mississippi. The circle described from this centre with a radius to San Francisco will pass through Vancouver on the Columbia, the port of Severn river on Hudson's Bay, through Quebec, through Boston, through Havana, Vera Cruz, and the city of Mexico. With a radius to the 49th°, a circle will pass through Mobile, New Orleans, and Matagorda. This spot is, therefore, the geographical centre of the North American Continent and of the Basin of the Mississippi, both at once. It is also equally the centre of the American Union, as it is now blocked out into existing States and into prospective States, to occupy sites in the now-existing Territories! Moreover, it is equidistant from, and exactly in, the middle between the two halves of the human family, distinctly concentrated; the one half Christians, occupying Western Europe, to the number of 259,000,000 of population; the other half Pagans, occupying Oriental Asia and Polynesia, to the number of 650,000,000! Europe has all the outlets of its inland seas and rivers towards the west, debouching on to our Atlantic front, towards which its whole surface slopes. Asia similarly presents to our Pacific front, an Oriental slope, containing her great rivers, the densest masses of her population, and detached islands of great area, dense population, and infinite

production. The distance from the European to the Asian shores (from Paris to Pekin), travelling straight by the continuous river line of the Potomac, Ohio, Missouri, Platte, and Snake rivers, and across the two oceans, is only 10,000 geographic miles. This straight line is the axis of that temperate zone of the Northern Hemisphere of the globe, thirty-three degrees in width, which contains four-fifths of the land, nine-tenths of the people, and all the white races, commercial activity, and industry of the civilized world. When, therefore, this interval of North America shall be filled up, the affiliation of mankind will be accomplished, proximity recognised, the distraction of intervening oceans and equatorial heats cease, the remotest nations be grouped together and fused into one universal and convenient system of immediate relationship.

Such are some of the extraordinary attractions presented to mankind, as a social mass, by the position and configuration of the Mississippi Basin. There is another and superlative prospective view. This presents itself in contrasting the physical configuration of North America with the other continents.

Europe, the smallest in area of the continents, culminates in its centre into the icy masses of the Alps. From the glaciers, where all the great rivers have their sources, they descend the declivities and radiate to the different seas. The Danube flows directly east to the Pontic Sea; the Po, to the Adriatic; the Rhone, to the Sea of Lyons; the Rhine, north to the German Sea. Walled off by the Pyrenean and Carpathian Mountains, divergent and isolated, are the Tagus, the Elbe, and other single rivers, affluents of the Baltic, the Atlantic, the Mediterranean, and the Pontic Sea. Descending from common radiant points and diverging every way from one another, no intercommunication exists among the rivers of Europe towards their sources; navigation is petty and feeble; art and commerce have never,

during thirty centuries, united so many small valleys, remotely isolated by impenetrable barriers. Hence upon each river dwells a distinct people, differing from all the rest in race, language, religion, interests, and habits. Though often politically amalgamated by conquest, they again relapse into fragments, from innate geographical incoherence. Religious creeds and diplomacy form no more enduring bond. The history of these nations is a story of perpetual war, of mutual extermination: an appalling dramatic catalogue of a few splendid tyrannies crushing multitudinous millions of submissive and unchronicled serfs.

Exactly similar to Europe, though grander in size and population, is Asia. From the stupendous central barrier of the Himalayas run the four great rivers of China, due east, to discharge themselves under the rising sun: towards the south run the rivers of Cochin China, the Ganges, and the Indus: towards the west, the rivers of the Caspian: and north, through Siberia to the Arctic Sea, many rivers of the first magnitude. During fifty centuries, as now, the Alps and Himalaya Mountains have proved insuperable barriers to the amalgamation of the nations around their bases and dwelling in the valleys that radiate from their slopes. The continents of Africa and South America, as far as we are familiar with the details of their surfaces, are even more than these perplexed into dislocated fragments.

In contrast, the interior of North America presents towards heaven an expanded bowl, to receive and fuse into harmony whatsoever enters within its rim. So, each of the other continents presenting a bowl reversed, scatter everything from a central apex into radiant distraction. Political societies and empires have in all ages conformed themselves to these emphatic geographical facts. This Democratic Republican empire of North America is then predestined to expand and fit itself to the continent; to control the oceans on either hand, and eventually the

continents beyond them. Much is uncertain, yet through all the vicissitudes of the future, this much of eternal truth is discernible. In geography the antithesis of the old world, in society we are and will be the reverse. *Our* North America will rapidly accumulate a population equalling that of the rest of the world combined: a people one and indivisible, identical in manners, language, customs, and impulses: preserving the same civilization, the same religion; imbued with the same opinions, and having the same political liberties. Of this we have two illustrations now under our eye, the one passing away, the other advancing. The aboriginal Indian race, amongst whom, from Darien to the Esquimaux, and from Florida to Vancouver's Island, exists a perfect identity in hair, complexion, features, religion, stature, and language: and, second, in the instinctive fusion into one language and into one new race, immigrant Germans, English, Norwegians, Celts, and Italians, whose individualities are obliterated in a single generation.

Thus, the perpetuity and destiny of our sacred Union find their conclusive proof and illustration in the bosom of nature. The political storms that periodically rage are but the clouds and sunshine that give variety to the atmosphere and checker our history as we march. The possession of the Basin of the Mississippi, thus held in unity by the American people, is a supreme, a crowning mercy. Viewed alone in its wonderful position and capacity among the continents and the nations; viewed, also, as the dominating part of the great calcareous plain formed of the conterminous Basins of the Mississippi, St. Lawrence, Hudson's Bay, and Mackenzie, the amphitheatre of the world—here is supremely, indeed, the most magnificent dwelling-place marked out by God for man's abode.

Behold, then, rising now and in the future, the empire which industry and self-government create. The growth of half a cen-

ture, hewed out of the wilderness—its weapons, the axe and plow; its tactics, labor and energy; its soldiers, free and equal citizens. Behold the oracular goal to which our eagles march, and whither the phalanx of our States and people moves harmoniously on, to plant a hundred States and consummate their civic greatness.

CHAPTER X.

PASTORAL REGION.

THERE is a radical misapprehension in the popular mind as to the true character of the "Great Plains of America," as complete as that which pervaded Europe respecting the Atlantic Ocean during the whole historic period prior to COLUMBUS. These PLAINS are not *deserts*, but the opposite, and are the cardinal basis of the future empire of commerce and industry now erecting itself upon the North American Continent. They are calcareous, and form the PASTORAL GARDEN of the world. Their position and area may be easily understood. The meridian line which terminates the States of Louisiana, Arkansas, Missouri, and Iowa on the west, forms their eastern limit, and the Rocky Mountain crest their western limit. Between these limits they occupy a longitudinal parallelogram of less than 1000 miles in width, extending from the Texan to the Arctic coast.

There is no timber upon them, and single trees are scarce. They have a gentle slope from the west to the east, and abound in rivers. They are clad thick with nutritious grasses, and swarm with animal life. The soil is not silicious or sandy, but is

a fine calcareous mould. They run smoothly out to the navigable rivers, the Missouri, Mississippi, and St. Lawrence, and to the Texan coast. The mountain masses towards the Pacific form no serious barrier between them and that ocean. No portion of their whole sweep of surface is more than 1000 miles from the best navigation. The prospect is everywhere gently undulating and graceful, being bounded, as on the ocean, by the horizon. Storms are rare, except during the melting of the snows upon the crest of the Rocky Mountains. The climate is comparatively *rainless*; the rivers serve, like the Nile, to irrigate rather than drain the neighboring surface, and have few affluents. They all run from west to east, having beds shallow and broad, and the basins through which they flow are flat, long, and narrow. The area of the "Great Plains" is equivalent to the surface of the twenty-four States between the Mississippi and the Atlantic Sea, but they are one homogeneous formation, smooth, uniform, and continuous, without a single abrupt mountain, timbered space, desert, or lake. From their ample dimensions and position they define themselves to be the *pasture-fields of the world*. Upon them PASTORAL AGRICULTURE will become a separate grand department of national industry

The pastoral characteristic, being novel to our people, needs a minute explanation. In traversing the continent from the Atlantic Beach to the South Pass, the point of greatest altitude and remoteness from the sea, we cross successively the timbered region, the prairie region of soft soil and long annual grasses, and finally the Great Plains. The two first are irrigated by the rains coming from the sea, and are *arable*. The last is *rainless*, of a compact soil, resisting the plow, and is, therefore, *pastoral*. The herbage is peculiarly adapted to the climate and the dryness of the soil and atmosphere, and is *perennial*. It is edible and nutritious throughout the year. This is the "gramma" or

"buffalo grass." It covers the ground one inch in height, has the appearance of a delicate moss, and its leaf has the fineness and spiral texture of a negro's hair. During the melting of the snows in the immense mountain masses at the back of the Great Plains, the rivers swell like the Nile, and yield a copious evaporation in their long sinuous courses across the Plains: storm clouds gather on the summits, roll down the mountain flanks, and discharge themselves in vernal showers. During this temporary prevalence of moist atmosphere these delicate grasses grow, seed in the root, and *are cured into hay upon the ground* by the gradually returning drouth. It is in this longitudinal belt of perennial pasture upon which the buffalo finds his *winter food*, dwelling upon it without regard to latitude, and here are the infinite herds of *aboriginal* cattle peculiar to North America—buffalo, wild horses, elk, antelope, white and black-tailed deer, mountain sheep, the grisly bear, wolves, the hare, badger, porcupine and smaller animals innumerable. The aggregate number is cattle, by calculation from sound data, exceeds one hundred million. No annual fires ever sweep over the Great Plains; these are confined to the Prairie region.

The Great Plains also swarm with poultry—the turkey, the mountain cock, the prairie cock, the sand-hill crane, the curlew; water-fowl of every variety, the swan, goose, brant, ducks; mammals, the armadillo, the pecary, reptiles, the horned frog; birds of prey, eagles, vultures, the raven, and the small birds of game and song. The streams abound in fish. Dogs and demi-wolves abound. The immense population of nomadic Indians, lately a million in number, have, from immemorial antiquity, subsisted exclusively upon these aboriginal herds, being unacquainted with any kind of agriculture or the habitual use of vegetable food or fruits. From this source the Indian draws exclusively his food, his lodge, his fuel, harness, clothing, bed, his ornaments, weapons,

and utensils. Here is his sole dependence from the beginning to the end of his existence. The innumerable carnivorous animals also subsist upon them. The buffalo alone have appeared to me as numerous as the American people, and to inhabit as uniformly as large a space of country. The buffalo robe at once suggests his adaptability to a winter climate.

The Great Plains embrace a very ample proportion of *arable soil* for farms. The "bottoms" of the rivers are very broad and level, having only a few inches of elevation above the waters, which descend by a rapid and even current. They may be easily and cheaply saturated by all the various systems of artificial irrigation, azequias, artesian wells, or flooding by machinery. Under this treatment the soils, being alluvial and calcareous, both from the sulphate and carbonate formations, return a prodigious yield, and are independent of the seasons. Every variety of grain, grass, vegetable, the grape and fruits, flax, hemp, cotton, and the flora, under a perpetual sun, and irrigated at the root, attain extraordinary vigor, flavor, and beauty.

The Great Plains abound in fuel, and the materials for dwellings and fencing. Bituminous coal is everywhere interstratified with the calcareous and sandstone formation; it is also abundant in the flanks of the mountains, and is everywhere conveniently accessible. The dung of the buffalo is scattered everywhere. The order of vegetable growth being reversed by the aridity of the atmosphere, what show above as the merest bushes, radiate themselves deep into the earth, and form below an immense arborescent growth. Fuel of wood is found by digging. Plaster and lime, limestone, freestone, clay, and sand, exist beneath almost every acre. The large and economical *adobe* brick, hardened in the sun and without fire, supersedes other materials for walls and fences in this dry atmosphere, and, as in Syria and Egypt, resists decay for centuries. The dwellings thus con-

structed are most healthy, being impervious to heat, cold, damp, and wind.

The climate of the Great Plains is favorable to health, longevity, intellectual and physical development, and stimulative of an exalted tone of social civilization and refinement. The American people and their ancestral European people having dwelt for many thousand years exclusively in countries of timber and within the region of the *maritime* atmosphere; where winter annihilates all vegetation annually for half the year; where all animal food must be sustained, fed, and fattened by tillage with the plow; where the essential necessities of existence, food, clothing, fuel, and dwellings, are secured only by constant and intense manual toil; why, to this people heretofore, the immense empire of pastoral agriculture, at the threshold of which we have arrived, has been as completely a blank, as was the present condition of social development on the Atlantic Ocean and the American Continent to the ordinary thoughts of the antique Greeks and Romans! Hence this immense world of plains and mountains, occupying three-fifths of our continent, so novel to them and so exactly contradictory in every feature to the existing prejudices, routine, and economy of society, is unanimously pronounced an uninhabitable desert. To any reversal of such a judgment, the unanimous public opinion, the rich and poor, the wise and ignorant, the famous and obscure, agree to oppose unanimously a dogmatic and universal deafness. To them, the delineations of travellers, elsewhere intelligent, are here tinged with lunacy; the science of geography is befogged; the sublime order of Creation no longer holds, and the supreme engineering of God is at fault and a chaos of blunders!

The PASTORAL REGION is longitudinal. The bulk of it is under the Temperate Zone, out of which it runs into the Arctic Zone on the north, and into the Tropical Zone on the south.

The parallel Atlantic arable and commercial region flanks it on the east; that of the Pacific on the west. The Great Plains, then, at once separate and bind together these flanks, rounding out both the variety and compactness of arrangement in the elementary details of society, which enables a continent to govern itself with the same ease as a single city.

Assuming, then, that the advancing column of progress having reached and established itself in force all along the eastern front of the Great Plains, from Louisiana to Minnesota; having, also, jumped over and flanked them to occupy California and Oregon; assuming that this column is about to *debouch* upon them to the front and occupy them with the embodied impulse of our thirty millions of population, heretofore scattered upon the flanks, but now converging into phalanx upon the centre: some reflections, legitimately made, may cheer the timid, and confirm those who hesitate from old opinion and the prejudices of adverse education.

It is well established that six-tenths of the food of the human family is, or ought to be, animal food, the result of pastoral agriculture. The cattle of the world consume eight times the food per head, as compared with the human family. Meat, milk, butter, cheese, poultry, eggs, wool, leather, honey, are the productions of pastoral agriculture. Fish is the spontaneous production of the water. Nine-tenths of the labor of arable culture is expended to produce the grain and grasses that sustain the present supplies to the world of the above enumerated articles of the pastoral order. If, then, a country can be found where pastoral produce is spontaneously sustained by nature, as fish in the ocean, it is manifest that arable labor, being reduced to the production of bread food only, may condense itself to a very small per centage of its present volume, and the cultivated ground be greatly reduced in acres.

At present the pastoral culture of the American people results exclusively from the plow, and this is its amount :

Cattle of all kinds	18,378,907
Horses and mules	4,896,050
Sheep	21,722,220
Swine	30,334,213
Value	\$655,883,658

It is probable that the aggregate *aboriginal* stock of the Great Plains still exceeds in amount the above table. It is all spontaneously supported by nature, as is the fish of the sea. Every kind of our domestic animals flourishes upon the Great Plains equally well with the wild ones. Three tame animals may be substituted for every wild one, and vast territories re-occupied, from which the wild stock has been exterminated by indiscriminate slaughter and the increase of the wolves.

The American people are about, then, to inaugurate a new and immense order of industrial production: PASTORAL AGRICULTURE.—Its fields will be the Great Plains intermediate between the oceans. Once commenced, it will develop very rapidly. We trace in their history the successive inauguration and systematic growth of several of these distinct orders: The tobacco culture, the rice culture, the cotton culture, the immense provision culture of cereals and meats, leather and wool, the gold culture, navigation external and internal, commerce external and internal, transportation by land and water, the hemp culture, the fisheries, manufactures.

Each of these has arisen as time has ripened the necessity for each, and noiselessly taken and filled its appropriate place in the general economy of our industrial empire.

This pastoral property transports itself on the hoof, and finds its food ready furnished by nature. In these elevated countries fresh meats become the preferable food for man, to the exclusion

of bread, vegetables, and salted articles. The atmosphere of the Great Plains is perpetually brilliant with sunshine, tonic, healthy and inspiring to the temper. It corresponds with and surpasses the historic climate of Syria and Arabia, from whence we inherit all that is ethereal and refined in our system of civilization, our religion, our sciences, our alphabet, our numerals, our written languages, our articles of food, our learning, and our system of social manners.

As the *site* for the great central city of the "Basin of the Mississippi" to arise prospectively upon the developments now maturing, this city* has the start, the geographical position, and the existing elements with which any rival will contend in vain. It is the focal point where three developments, now near ripeness, will find their *river port*. 1. The pastoral development. 2. The gold, silver, and salt production of the Sierra San Juan. 3. The continental railroad from the Pacific. These great fields of enterprise will all be recognised and understood by the popular mind within the coming six years, and will be under vigorous headway in ten. There must be a great city here, such as antiquity built at the head of the Mediterranean and named Jerusalem, Tyre, Alexandria, and Constantinople; such as our own people name New York, New Orleans, San Francisco, St. Louis.

* Kansas City, at the mouth of the Kansas.

CHAPTER XI.

EXTENT AND CHARACTERISTICS OF THE HEMP-GROWING
REGION OF THE UNITED STATES.

THERE is a region of Missouri and Kansas of rapidly rising fame and importance, gaining for itself a State and a National reputation, which we will define as the "Region of the Hemp Culture." Specially favored by nature in its geographical locality, climate, navigation, and superlative fertility, this region has become the seat of a hemp culture which has a strong, organized, and national foundation. The hemp culture receives special attention in twenty counties bisected by the Missouri river, and all adjacent to its two shores. They form a belt of land east and west, enclosed between the thirty-eighth and fortieth degrees of latitude. Here is the production of these counties in hemp, flax, and tobacco, in order as they lie along the river—census of 1850:

	Hemp, tons.	Flax, lbs.	Tobacco, lbs.
Jackson	361	1,443	38,920
Lafayette	2,462	6,807	75,035
Saline	1,559	160	287,533
Cooper	39	9,835	137,800
Moniteau	11	7,621	39,550
Cole	11	5,129	43,150
Cass	1	2,048	5,353
Johnson	65	7,670	900
Pettis	52	2,784	1,300
Miller	3	5,600	12,900
Platte	4,355	420	66,000
Clay	1,288	88,197	20,050
Ray	431	6,802	516,906

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Carroll	300	1,779	289,869
Charlton	170	3,213	2,667,908
Howard	904	16,948	3,188,122
Boone	51	20,695	584,949
Clinton	193	5,376	6,850
Randolph	23	17,368	2,262,796
Buchanan	1,894	620	7,850
14,173 tons, or 28,346,000 pounds.			

Since 1850, the hemp culture has doubled in vigor, both in the land assigned to its culture and in the application of machinery to its production and manufacture. The production of that year, within the above region, was 28,346,000 pounds, estimating the ton at 2000 pounds; and that of the whole State 16,119 tons, or 32,238,000 pounds.

The course of the Missouri river through this region of superlative fertility may be compared to the Nile flowing through lower Egypt to the Mediterranean. It is in the ability of an abundant and bounteous production that this comparison holds, but not in temperature, climate, or physical features. In Egypt, the arable and inhabitable district is limited to the ravine of the Nile, which is overflowed and irrigated by its waters; beyond this the primeval desert reigns everywhere supreme. With us, the same fertility characterizes the borders of the stream, which has the same abundance of fertilizing waters, the same splendid navigation, the same solemnity in its ever-flowing channel, and the same redundancy of benignant attributes which have deified the Nile. But, on every side, from the gently elevated crest that bounds the ravine of the Missouri, expands, with a radius of 1000 miles, that variegated, calcareous plain, which we define as the "Basin of the Mississippi." This undulating plain has an area equal in capacity to all the other river basins of the world, and combines all their varieties. So much does the mind

revert to the ocean to explain by comparison its exquisite romantic beauty, at once immense and regular, that this hymn to the sea may with propriety describe it :

“Thou glorious mirror, where the Almighty's form
Glasses itself in tempests; in all time
Calm or convulsed—in breeze, or gale, or storm,
Dark heaving;—boundless, endless, and sublime—
The image of eternity—the throne
Of the Invisible—* * * each zone
Obeys thee; thou goest forth, dread, fathomless, alone!”

The current course of the Missouri and Mississippi rivers is from north to south. The latter is so through its whole length. The Missouri, after a southern course of 3000 miles, receives the Kansas river in latitude 39°, turns abruptly to the *east*, penetrates the State of Missouri, and bisects it from west to east, with a channel 400 miles in length. Into the eastern mouth of this channel all the great *natural* lines of travel coming from the Atlantic by the St. Lawrence, Ohio, and South Mississippi rivers concentrate as rays to a focal point. They are altogether carried forward to the central west at the mouth of the Kansas, where the unbroken prairie formation meets the river, and to which the radiant land routes over their expanse, coming from the Gulf of Mexico and the Pacific Ocean, similarly concentrate. This channel is now, and is destined prospectively to remain, the most thronged and wonderful in the world. It is central, *east and west*, to the American Continent, to the Basin of the Mississippi, and to the American Union; it lies along the *axis* of that isothermal temperate zone, within which is the zodiac of nations, and is also the axis of the population, progress, travel, production, consumption, commerce, transportation, and habitation of the human race. It is the highway from Western Europe to Oriental Asia. It is under that line of latitude where

all things northern and southern meet and blend together—where the day and night, the seasons of the year, labor, the growth of nature, and all the elements of human society and of the vegetable and animal world, have the widest range, the greatest variety, and the highest development. Having a double shore, this channel has 800 miles of coast. It has the familiar accommodation and safety of a canal, a railroad, or a street. Its depth of water and capacity for commerce will receive and carry forward the freightage of all the oceans and all the continents. Similar channels have been known and used in both ancient and modern times—such are the Lower Nile, the Bosphorus and Dardanelles, the Strait of Hercules, the English Channel, the Baltic's mouth, the Hudson from New York to Albany—only this has greater length, divides more fertile shores, and connects more numerous hosts of nations.

Such is the Hemp Region. It has an altitude 1000 feet above the sea, a salubrity equal to the Table Lands, a fertility superior to the Delta of Louisiana, an unlimited area, a navigation better than the sea, a climate exactly congenial to the white man, a rural beauty for ever graceful, fresh, and fascinating. It is, on a vastly magnified scale, the counterpart of that delicious and classic Italy, traversed by the Po, dotted with cities, Venice, Verona, Mantua, Milan, of which SHAKSPEARE has written, and where VIRGIL and TASSO sung. If an ellipse be described extending from the Osage mouth to Fort Riley, some 500 miles, and in breadth 300, it will contain that district of fat, lustrous soil, exuberant vegetation, graceful beauty, and abundant streams, where nature has bountifully blended all her choicest gifts to locate the rural quintessence of America and of the world!

Stimulated by the inspiring splendor of their natural position, the vigorous population of this region have pursued agriculture, commerce, and manufactures with an ambition and success which

indicate a growing empire in nothing unworthy of their prospective destiny. Every department of production and industry has been tried, and all thrive. Hemp, tobacco, flax, the grape and wine, silk, sugar, the cereals and grasses; cattle of the first breeds; agricultural machinery, flowers, steam, and mining. Society exalts its tone by a taste for religious edifices and eloquence; education receives great and universal care; music and refinement are zealously cultivated.

Apart from these fascinating gifts of nature and the promise which germinates beneath their warmth, a *prestige* entwines itself with and illuminates the history of this region. This runs back to the golden time of the patriarchal founders of our continental empire; it stretches over the dark chasm of seaboard monarchy, and has its fountain in the luminous Aurora and among the immortal patriots who limned out the profile of our continental empire, and inaugurated the march of our destinies. We have here amongst us the graves of DANIEL BOONE, GEORGE ROGERS CLARKE, LACLEDE, and the names of JOHN JACOB ASTOR, LOUIS XVI., of France, LASALLE, and DE SOTO, great and intrepid men who led or befriended the pioneers, those stars which shone in the first twilight of empire. To JEFFERSON and JACKSON we were known, and they have been known to us as our friends.

To understand this *prestige* and its strength, it is necessary briefly to select out and set apart to themselves a few facts in the history of progress which stand along its path, and, like pyramids in the solitude, fix its remarkable epochs.

This system of civilized society, of which we Americans form a part, is very ancient and is inherited. HISTORY is the journal of its geographical progress, its vicissitudes, its struggles, and its energies. Where society has assumed its largest form and attained the highest level of civilization and longest endurance,

it is defined to be an *empire*. History chiefly occupies itself with the biography of these empires, their rise, culmination, and decadence. They have appeared, lived, and departed, like generations of men. They lie along a serpentine zone of the north hemisphere of the globe, within an isothermal belt, and form a zodiac thirty-five degrees in width. The axis of this zodiac alternates above and below the 40th degree of latitude, as the neighborhood or remoteness of the oceans modifies the climates of the continents. These empires are the Chinese, the Indian, the Persian, the Grecian, the Roman, the Spanish, the British, and, last, the Republican Empire of North America. These are the essential ones in the regular order of time and upon the hereditary line of progress. It is here that the mass of land is the greatest, and where the continents most nearly approach one another. This zodiac of nations contains nine-tenths of the white population of the globe, and all its civilization. The territory of the American people, extending across this continent, exactly fills this isothermal zone from edge to edge, occupying the whole connecting space between Western Europe and Oriental Asia. It is on these two fronts of the old continents that the two halves of the human race are separately congregated, both fronting America and fronting one another, face to face, across America. The straight line of intercourse between them, only 10,000 miles in length, pursues the *axis* of the isothermal zone, out of which it never deflects either into the torrid heats or the frozen north. Here, then, is the tenacious, the divine instinct of progress and liberty, which fired the soul of COLUMBUS, of WASHINGTON, of JEFFERSON, and of JACKSON. In this faith they lived; this faith they vindicated and never betrayed; and in this faith they died, to inherit among posterity a supreme, untainted immortality. This faith forms the inspiration of the Declaration of 1776, animated the patriarchal generation, and was renewed and codified

in the Constitution of '87. It selected JEFFERSON in 1798 and JACKSON in 1828. Its eagles are now erected among the pioneers out in the wilderness, in Kansas, in Utah, and in Oregon. Upon them are embossed the ancient rights of man, the *continental* union, the *continental* railroad, the *continental* cause!

During the administration of JEFFERSON, *central extension*, pursuing the isothermal line through the continent, was prosecuted with great vigor as the favorite policy of the Government. LEWIS and CLARKE reconnoitered and made known the character of the rivers, the mountains, and the connections of the basins of the Mississippi and Columbia by direct passes. JOHN JACOB ASTOR planted trading colonies and paths through the wilderness, and upon the bank of the other sea opposite to China. The rapid creation of the States of Ohio, Kentucky, Indiana, Illinois, and Missouri, carried forward the Union in a salient column, embracing the water-line of the great rivers and reaching here to the geographical centre in 1820! Up to that date the flanks had remained stationary in New York and Georgia. The design then was to go through with the parallelogram of central States from sea to sea, and from this base to advance outward, planting States simultaneously towards the south and towards the north. This policy was crippled during the time of Mr. MADISON by the vicissitudes of foreign war. It was abandoned and reversed by Messrs. MONROE and ADAMS. In their time grew up the political divisions of North and South, and a *maritime* policy inaugurated itself. Since that date, *central* progress has abruptly stopped, and great activity upon the flanks has brought them up to an even front in Iowa, and a greatly advanced position in Texas. The *central* force has, however, *jumped* the continent straight to the front, occupied the sea-coasts of Oregon and

California, and founded the new *maritime* power upon the Pacific and opposite to Asia.

Since the selection of the *site* of the city of Independence in 1824 to 1854, a chasm in time of thirty years, *central extension* has rested as stagnant as though our great river had been frozen at this point into solid and perpetual ice. It has been stopped by an artificial cordon of Indian tribes and federal law as effectually as by a continuous wall of brass extending from Louisiana to the 49th degree, and rising in altitude from the prairie foundation to the clouds. Hence is seen the unique and novel sight of a great *continental empire*, formed of a circular shell of States traced round the circumferent seaboard, and surrounding a hollow and vacant disk of *desert* continent. Such is at present the theoretical principles upon which *maritime* policy legislates for the great region of our country connecting the States of Missouri and California straight across. The antagonistic struggle is between the *instinct* of progress plowing out its highway through the continent, along the *isothermal axis by land*, on the one hand, and on the other hand, the external shell of *maritime* power to hold the continent in a maritime hoop, and subject its industrial greatness to a permanent supremacy.

In the great city of New York the active instinct of progress has always had a working vitality. Like Rome, she has pursued an elastic policy, and has planted her commercial colonies at the right time, and in the right spots. These colonies, of the first class, are New Orleans, Chicago, and San Francisco. With all of these she maintains or needs direct connections by steamers, railroads, and telegraphs, as also with Europe in the rear. The time is ripe for another selection, which offers itself in the centre of the Mississippi Basin! A key-point of centrality and radiance, and of univalued excellence. This is Independence, the metropolis of the Hemp Region.

This young and vigorous city, crowning the southern bank of the Missouri river at the point of the angle where it deflects to the north, beetles over the avenues to the prairies of the south and west, like Gibraltar at the Strait of Hercules. It covers the rear of St. Louis, and confines her to the narrow field of the State of Arkansas. By the through railroad, coming by way of Chicago and Keokuk, crossing the Missouri river at Brunswick, and ascending the south bank, an air-line road exists of only fifty hours time hence to New York city. The river line of the Missouri, Illinois, and St. Lawrence deflects but little from an equal straightness and a similar distance in miles. Railroads passing onwards to Galveston into Texas and New Mexico, to San Francisco, Utah, and Astoria, will be the shortest lines from New York city to all these extremities and various regions of our continent. Here will be found the shortest diagonal line wherewith to bisect the productive territory and population of the Union towards the *south-west*, through the grain, hemp, and pastoral regions, to the sugar of Texas and the gold and silver of Mexico. It is shorter to Galveston than any route traversing the maritime Atlantic States and bending with the sea-coast. It traverses a line of the greatest variety of production and largest distribution of groceries, dry goods, and manufactured metals. This *hemp region* is not more celebrated for hemp than it is for tobacco, grain, blooded cattle, and wool, only this former production is not shared with surrounding regions, where the latter engross exclusive attention. The present population of the *hemp region* is 202,413; the assessed property \$105,449,655.

Here, then, is an immense foundation wherefrom to grasp and control the expanding developments in front, consequent upon the obliteration of the Indian barrier, and the bursting forth of the pent-up flood of *central progress*, out over the prairies which undulate to Texas, Mexico, and the mountains. The front wave

of this flood-tide is already in motion; its spray sprinkles the plains almost to the mountain foot. The achievements of the coming *decade* of years will differ from its predecessor. It will exhibit a greater mass of energy, concentrated in one direction, occupied by a single object, and moving with immense means over a very short line, which is perfectly straight and open. Heretofore the active force of progress has been operating round the rim of our territory, on Lake Superior, in California, in Texas, in Florida, in detached squadrons separated from the base of old society, by the diameter of the continent, or keeping up its communication round the circumference by *sea*. The opening *decade* beholds a concentric movement, flooding into the centre, and reducing all movements to the shortest radii! Its career opens with a general force of 20,000,000 of population, having gold in hand, railroads, steamers, rivers and prairies on their banks. The difficulties of the wilderness are overcome, the temptation every way increased, the means of motion enormously accumulated.

Such is the prosperous future which shines over the *central west*, and fills the atmosphere to the remotest horizon. This prospective view is not too sanguine, it is not exaggerated, it is only in moderate and appropriate proportion to the material long accumulating and now beginning to stir with activity through its whole reanimated bulk. Sound health, complete preparation, fresh and mature vigor, judgment, and a defined and finite object, all blend themselves with the immense and successful movement which closes in to occupy the *centre* of our country, to reunite its flanks, and to adjust its true and geographical balances for ever.

CHAPTER XII.

THE PARC OF SAN LUIS; THE SIERRA SAN JUAN; THE SIERRA LA PLATA; THE GOLD FIELDS OF THE "PLATEAU OF NORTH AMERICA."

IN October, 1858, were published my remarks upon the SAN JUAN MOUNTAIN and the surrounding region of the PLATEAU. This interesting region has not as yet been reached by the pioneers, but the summer campaign of Pike's Peak has been one of such wonderful activity and immense results towards developing the *central gold fields*, that to repeat some of the guide notes, will freshen the scent and ease and hasten the progress of the coming season.

I have heretofore defined a supreme *focal point* of the Cordillera, of which Pike's Peak is the salient beacon to those who travel up the Great Plains. The five primary mountain ranges, each crested with perpetual snow, which simultaneously radiate from this focal point, are: the northern arm of the Cordillera towards the north-west; the promontory of Pike's Peak towards the east; the southern arm of the Cordillera towards the south-east; the Sierra Mimbres towards the direct south; and the promontory of the Elk Mountain towards the west. Between the two first flows out the South Platte river, first forming the *New Parc* within the mountain mass, and then debouching upon the Great Plains to the north-east. Between the second and third defiles the Arkansas river, by a stupendous cañon, to the south-east: Between the Southern Cordillera and the Sierra Mimbres is the delicious Parc of San Luis, through which the Rio Grande del Norte meanders to the south: Between the Sierra Mimbres

and the Elk Mountain defiles the Eagle river by an immense and rugged cañon : Between the Elk Mountain and the Northern Cordillera descend the many streams, whose confluent waters, scooping out the great *Middle Parc*, unite to form the Rio Grande of the west, which, receiving lower down the Eagle rivers and the Rio Verde, becomes the Great Colorado of California. The two first-named rivers and the *South Parc* belong to the Basin of the Mississippi, coming down the eastern flank of the Cordillera : the three last-named rivers and their parcs open out upon the PLATEAU, having their descent from the western flank of the Cordillera.

Such is the wonderful array of the primary formations of nature, mountain ranges, rivers, parcs, cañons, which here concentrate to a single apex, from whence they are all at once visible within the circumference of the same horizon. The salient promontory, by which Pike's Peak is connected with the Cordillera, is about 100 miles in length. The point where it plunges into the Cordillera is reached by ascending either the Platte or Arkansas to the extreme source. The descent from the crest of the Cordillera into the Plateau beyond, is accomplished by either of the radiant streams, the Rio Grande of the West, the Eagle river, or the Rio del Norte.

The exploration and mining for gold has been as yet confined to the mountain flanks which enclose the Platte and its parc, known as the "Bayou Salado" or "New Parc," and has been within the rim of the Mississippi Basin. The reconnoissances of the mining parties have, however, fully reached the crest of the Cordillera, and will extend beyond in full force, so soon as the relenting rigor of the present winter shall admit of its passage.

Such is the position of the pioneers at the close of their first season of activity, which has produced three and a half million dollars of pure gold upon the out-cropping flanks of the Cordillera.

The true region of the precious metals is not yet reached; it lies beyond the Cordillera, upon the PLATEAU. It is the immense area convulsed by volcanic action; containing the Sierra San Juan, the Sierra La Plata, and the Sierra Wasatch, and seamed with the radiant gorges of the Del Norte, San Juan, Eagle, and Colorado rivers, where gold and silver will be found in *mass and in position*, accompanied by the precious stones. It is over this complex but sublime country that the pioneers will swarm during the coming season of 1860, penetrating and revealing the wonders of its labyrinthine recesses. Some brief notes in advance of their exploration may be opportune.

One radical fact is discernible to everybody. The amount of gold and silver coin among any people is the gauge of their civilization. It pays daily wages, and all industrial employments expand or contract with its volume. To produce and retain among themselves the precious metals is desirable with an ambitious people. For three and a half centuries the world has been supplied with coin extracted from the flanks of the Andes, and exported from Spanish America. Besides the mines of Chili, Peru, and Central America, a chief source, especially of silver, has been the flanks and spurs of the *Sierra Mimbres*, which traverses the Plateau of the Table Lands in Mexico, bisecting them from south to north, and traversing the States of Durango, Chihuahua, Sonora, and New Mexico. This mountain chain, 1200 miles in length, corresponds with the 109° meridian, leaving the Cordillera of the Andes in latitude 23°, and sinking into the Cordillera Madre in latitude 39°. It forms the backbone which divides the basins of the Del Norte and Colorado, and is deeply channelled by their many affluent streams. The energies of the Spanish race have reached, in mining, only to the sources of the Gila. North of that stream for 600 miles its pre-eminent metalliferous character does not diminish. As it

approaches its junction with the Sierra Madre, at the focus of so many stupendous rivers and mountains, it rises to an immense bulk and altitude. This elevated portion of 200 miles, distinguished by glaciers upon the summits, has the *local* name of *Sierra San Juan*. Midway from the western flank of the San Juan, protrudes the snowy chain of the *Sierra La Plata*, extending 300 miles towards the south-west, and enveloping the sources of the great river San Juan. Of all known and developed sources of the precious metals, the region of the *Plateau* traversed by the Sierra Mimbres, has been the most prolific and inexhaustible. Correct reason infers that all the transverse chains of the *Plateau* (the Wasatch, Snake river, Blue Mountains, and Olympians of Oregon) have the same metalliferous characteristics.

The region of the *Plateau* interrupted by these elevated mountain masses, and scored by the rivers, parcs, and cañons by which they are separated, is characterized by prodigious volcanic convulsions. Immense pedrigals of vitrified lava abound, walled around by upheaved mountains of carboniferous and sulphurous limestones. The variety and grandeur of the geological developments is infinite. No portion of the surface of the globe presents such wonderful phenomena, over so huge an area. It is into this region, so central to our national territories, and so conveniently accessible, that the pioneers are about to enter with the coming summer.

In the meantime, the Great Plains, continually and easily traversed, have become a familiar highway, the fertility and pastoral excellence of which a single season has established in the popular mind.

It is not easy for one who holds in his mental vision the progressive growth of our great country, so intense in volume and celerity, to disconnect its march from a visibly systematic mission.

What is already accomplished very distinctly prolongs its profile into the future, and predicts the order of advance. A new and splendid arena of empire is here suddenly thrown open, and its conquest at once undertaken by the pioneer host. It is thus that the martial energies and genius of our people are developed. The reclamation of new departments of the wilderness, reflecting its light through every detail of our industrial populations, kindles new fires which become universal to our people, as the area for their energies is expanded. All pursuits of life, and every corner of our country, receives its inspiration. Here is seen an order of progression, the counterpart of what distinguishes the history of European society, but the reverse of it in moral grandeur and social and political results. The formations of empires in the old world, accomplished by devastating battles, repeated in every generation for fifty centuries, exhibit only *force* to create and to sustain governments. Such bloody struggles we have lately seen in Italy, at Sebastopol, in India, and on the coasts of China. Upon *our* continent, and under *our* civic system, there prevails a universal instinct of conquest and organization, tempered by a discipline at once voluntary, universal, and perfect. This brings to the construction of empire, forces of unheard-of numbers and efficiency, perpetually in the field, and perpetually victorious. In our population of thirty millions, two millions annually change their homes. This impulse causes a yearly movement of our people, from the east to the west, resembling the undulation of the sea, which accompanies the great tide-wave. Diurnally is the surface of the sea lifted up in silence and poured upon the coasts of the continents. Very similar to this is the movement annually seen to impel our people, through and through, from the eastern to the western limit of organized society. This is seen and measured by the eye where

the foreign emigration reaches our shores, and where the pioneers debouch upon the wilderness.

With us, then, the forces of conquest are voluntary and self-governed. They employ themselves to reconnoitre, to create new societies, and to plant empire over the wilderness. These energies pervade society everywhere; they manifest themselves in their greatest activity where they encounter the wilderness, and seem, as it were, to be so broken by its resistance as to display the individual combatants, and unveil the details of an immense system.

Practically, then, the immense movements of the pioneers, heretofore expended around the region occupied by the Plains and the Great Mountains, now tend to converge upon them, and occupy them throughout their whole expanse. These countries are found upon trial to be the opposite of what imperfect examinations had predicted them to be. Everywhere smooth, open, fertile, of propitious climate and pastoral, transportation in every form of vehicle and on foot is easy and uninterrupted. Food upon the hoof transports itself. All classes, ages, and sexes go forth without trepidation or the anxieties incident to an uncertain destination. The distances are short, the area for occupation unlimited, the employments varied by arable agriculture, mining, pastoral agriculture, and commerce.

The production of gold and silver, the construction of habitations, of cities, and of states, will be hastened under a propitious climate, salubrious seasons, and perennial pastures. Public works will not linger far behind, and long before our going generation shall have ended its career, our states will compactly fill the space from one ocean to the other, and citizens of Asia and of Europe traverse familiarly the central region of our country, in the interchanges of commerce, and passing to and fro to their
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APPENDIX.

I.

SPEECH OF

COL. WILLIAM GILPIN,

ON THE SUBJECT OF THE PACIFIC RAILWAY.

DELIVERED AT INDEPENDENCE, MO., AT A MASS MEETING
OF THE CITIZENS OF JACKSON COUNTY, HELD NOVEMBER 5,
A. D. 1849.

It is with profound pleasure, Mr. Chairman, that I address my fellow-citizens here assembled, to respond approvingly to the National Convention at St. Louis. Having shared with the pioneers from Missouri in the original exploration and settlement of Oregon and California—having since been one amongst those soldiers who carried, during war, our national flag across the Sierra Madre, and planted it upon the waters descending to the Pacific (never thence to recede), I greet with enthusiastic joy these civic movements of the people to consummate, with the great works of peace, what war and exploration have opened. Diplomacy and war have brought to us the completion of our territory and peace. From this we advance to the RESULTS. These results are, for the present, the imperial expansion of our Republic to the other ocean, fraternity with Asia, and the construction across the centre of our territory, from ocean to ocean, of a great iron pathway, specially national to us, international to the northern continents of America, Asia, and Europe.

In approaching a discussion of a "National Railroad from the Mississippi to the Pacific," infinite in number and variety are the

matters which swarm up and demand to array themselves in its advocacy. Thus do I feel embarrassed how to say such things only as are true and sensible in themselves, as well as interesting to my hearers; let me then sketch what I may say under the following heads:—

- 1st. The National character of this work, and its *necessity*.
- 2d. Its practicability, and the present capacity of the Nation.
- 3d. The time and manner of its construction.

Progress, political liberty, equality. These, the most ancient and cardinal rights of human society, perplexed in the obscurity of military despotism, and almost lost for many centuries, are now struggling throughout the world to re-establish their pre-eminence. In America they occupy the vantage ground; for sovereignty resides in the suffrage, and with us it is universal. Progress, then, in America has the intensity of the whole people, showing itself in forms as infinite as the thoughts of the human mind. But it is to that department of progress which creates for us new states in the wilderness, and expands the area of our Republic, that I here restrict myself. Let us understand *this*; what it is at the present hour—what stimulates—what retards it. Since 1608 we have grown from nothing to 22,000,000: from a garden patch, to be thirty States and many Territories! This, with agriculture, manufactures, commerce, power, and happiness, is our progress so far. The annual yield in money of this agriculture and manufactures is now \$2,000,000,000. This commerce vexes all the waters, and penetrates to all the nations of the earth. This power, tranquilly complete on our own continent, compels peaceful deference abroad. This happiness, so beneficently felt at home, recruits us with the oppressed of all nations. But the life of a nation is long. Unlike human life, briefly extinguished in the grave, a nation breathes even on with the vigor of generations of men daily arriving at maturity, and then departing. A nation has then a *normal* law of growth, and it is this law which every American citizen ought familiarly to understand, for obedience to it is the first duty of patriotism.

Up to the year 1840, the progress whereby twenty-six States and four Territories had been established and peopled, had

amounted to a solid strip of twenty-five miles in depth, added annually, along the western face of the Union from Canada to the Gulf. This occupation of wild territory, accumulating outward like the annual rings of our forest trees, proceeds with all the solemnity of a Providential ordinance. It is at this moment sweeping onward to the Pacific with accelerated activity and force, like a deluge of men, rising unabatedly, and daily pushed onward by the hand of God. It is from the statistics accumulated in the bureaux at Washington (the decennial census, sales of public lands, assessments of State and National taxes), that we deduce with certainty the law of this deluge of human beings, which nothing interrupts and no power can stop. Fronting the Union on every side is a vast *army* of pioneers. This vast body, numbering 500,000 at least, has the movements and obeys the discipline of a perfectly organized military force. It is momentarily recruited by single individuals, families, and in some instances, communities, from every village, county, city, and State in the Union, and by emigrants from other nations. Each man in this moving throng is in force a platoon. He makes a farm upon the outer edge of the settlements which he occupies for a year, and then sells to the leading files of the mass pressing up to him from behind. He again advances twenty-five miles, renews his farm, is again overtaken, and again sells. As individuals fall out from the front rank, or fix themselves permanently, others rush from behind, pass to the front, and assail the wilderness in their turn.

Previous to the late war with Mexico, this busy throng was engaged at one point in occupying the peninsula of Florida and lands vacated by emigrant Indian tribes—at another in reaching the copper region of Lake Superior—in absorbing Iowa and Wisconsin. From this very spot had gone forth a forlorn hope to occupy Oregon and California; Texas was thus annexed, the Indian country pressed upon its flanks, and spy companies reconnoitering New and Old Mexico. Even then, obeying that mysterious and uncontrollable impulse which drives our nation to its goal, a body of the hardest race that ever faced varied and unnumbered privations and dangers, embarked upon the trail to

the Pacific coast, forced their way to the end, encountering and defying dangers and difficulties unparalleled, with a courage and success the like to which the world has not heretofore seen. Thus, then, *overland* sweeps this tide-wave of population, absorbing in its thundering march the glebe, the savages, and the wild beasts of the wilderness, scaling the mountains and debouching down upon the seaboard. Upon the high Atlantic sea-coast, the pioneer force has thrown itself into ships, and found in the ocean-fisheries food for its creative genius. The whaling fleet is the *marine* force of the pioneer army. These two forces, by land and sea, have both worked steadily onward to the North Pacific. They now reunite in the harbors of Oregon and California, about to bring into existence upon the Pacific a commercial grandeur identical with that which has followed them upon the Atlantic.

National wars stimulate progress, for they are the consequence of indiscreet opposition and jealousy of its march—and because in these periods of excitement the adventurous brush through the cobweb-laws spun by the metaphysics of peace. Then it is that the young pioneers, entering the armies of the frontier, rush out and reconnoitre the unpruned wilderness. During the Revolution, little armies, issuing down the Alleghanies, passed over Kentucky, Tennessee, and the North-west Territory. These new countries were reconnoitred and admired. With hardy frames, confirmed health, and recruited by a year or two of peace, these soldiers returned to occupy the choice spots which had been their bivouac and camping-grounds. From the campaigns of war grew the settlements of peace, and populous States displaced the wilderness. Another war came with another generation. Armies penetrated into Michigan, Upper Illinois, and through Mississippi. The great Mississippi river, crossed at many points, ceased to be a barrier, and the steamboat appeared plowing its yellow flood. Five great States, five Territories, and three millions of people now emblazon its western side!

And now again has come another generation and another war. Your armies have scaled the icy barriers of the "Mother Moun-

tain" and the Andes. Hid for a time in the mazes of their manifold peaks and ridges, they have issued out at many points upon the beach of the blue Pacific. Passing round by the great oceans, a military marine simultaneously strikes the shore, and lends them aid. Thus is the wilderness reconnoitred in war, its geography illustrated, and its conquerors disciplined. Your young soldiers, resting for a moment at home, resuming the civic wreath and weapons of husbandry, have sallied forth again to give to you great roads for commerce and a sisterhood of maritime States on the new-found ocean. Only four years ago, the nation, misled by prejudices artfully instilled into the general mind, regarded the great western wilds uninhabitable, and the new ocean out of reach. War came—100,000 soldiers, and as many citizens, went forth, penetrated everywhere, and returned to relate in every open ear the wonderful excellence of the climates and countries they had seen. Hence have come already these new States, this other seaboard, and the renewed vivacity of progress with which the general heart now palpitates. Will this cease or slacken? Has the pouring forth of the stream from Europe ever ceased since the day of Columbus? Has the grass obliterated the trails down the Alleghanies or across the Mississippi? Rather let him who doubts seat himself upon the bank of our magnificent river and await the running dry of its yellow waters—for sooner shall he see this, than a cessation in the crowd now flowing loose to the western seaboard! Gold is dug; lumber is manufactured; pastoral and arable agriculture grow apace; a marine flashes into existence; commerce resounds; the fisheries are prosecuted; vessels are built; steam pants through all the waters. Each interest, stimulating all the rest, and perpetually creating novelties, a career is commenced to which, as it glances across the Pacific, the human eye assigns no term.

The distance from the top of the Sierra Madre (Rocky Mountains), where you leave behind the waters flowing to the Atlantic, is everywhere some 1500 miles. The topographical character of this ultramontane region is very grand and characteristic. It is identical with the region at the sources of the La Plata, Amazon, and Magdalena of South America, but more immense. Sketched

by its great outlines, it is simply this: The chain of the Andes debouching north from the Isthmus, opens like the letter Y into two primary chains (Cordilleras). On the right the SIERRA MADRE, trending along the coast of the Mexican Gulf, divides the northern continent almost centrally, forming an unbroken water-shed to Behring's Straits. On the left, the ANDES follows the coast of the Pacific, warps around the Gulf of California, and passing along the coast of California and Oregon (under the name of Sierra Nevada) terminates also near Behring's Straits. The immense interval between these chains, is a succession of *intra-montane* basins, *seven* in number, and ranging from south to north. The whole forms the Great Plateau of the TABLE LANDS.

First, is the "Basin of the City of Mexico," receiving the interior drainage of both Cordilleras, which waters, having no outlet to either ocean, are dispersed again by evaporation. *Second*, the "Balson de Mapimi," collecting into the Laguna the streams draining many States, from San Luis Potosi to Coahuila, also without any outflow to either ocean. *Third*, the "Basin of the Del Norte," whose vast area feeds the Rio del Norte, the Conchos and Pecos. These, concentrated into the Rio Grande del Norte behind the Sierra Madre, have, by their united volume, burst through its wall and found an outlet towards the Atlantic. The geological character of this basin, its altitude, its configuration and locality, all assign it this position, as distinguishing it from all others contributing their waters to the Atlantic. *Fourth*, the "Basin of the Great Colorado of the West." This immense basin embraces *above*, the great rivers Rio Verde and Rio Grande, whose confluent waters, penetrating the mighty Cordillera of the Andes, athwart from base to base, discharge themselves into the Gulf of California. Into this sublime gorge (the Cañon of the Colorado), the human eye has never swept, for an interval of 375 miles; so stern a character does nature assume where such stupendous mountains resist the passage of such mighty rivers. *Fifth*, the "Basin of the great Salt Lake," like the Caspian of Asia, containing many small basins within one great rim, and losing its scattered waters by evaporation, has no outflow to

either ocean. *Sixth*, "The Basin of the Columbia," lying across the northern flanks of the two last, and grand above them all in position and configuration. Many great rivers, besides the Snake and Upper Columbia, descending from the great arc of the Sierra Madre, where it circles towards the north-west from the 43° to 52° , flowing from east to west, and concentrating above the *Cascades* into a single trunk, which here strikes the mighty Cordillera of the Andes (narrowed to one ridge), and disgorge itself through this sublime pass at once into the open Pacific. It is *here*, descending by the grade of this river the whole distance from the rim of the Valley of the Mississippi and through the Andes to the Pacific, that the great *debouch* of the American continent towards the West is found—and here will be the pathway of future generations, as the people of the old world pass down the Mediterranean and out by Gibraltar. Above, the "Basin of Frazer River" forms a *seventh* of the TABLE LANDS. This has burst a cañon through the Andes, and, like the fourth and sixth basins, sends its waters to the Pacific. With the geography of the more northern region we are imperfectly acquainted, knowing however that from Pugett's Sound to Behring's Straits, the wall of the Andes forms the beach itself of the Pacific, whilst the Sierra Madre forms the western rim of the basins of the Saskatchewan of Hudson's Bay and the McKenzie of the Arctic Seas.

Thus then briefly we arrive at this great cardinal department of the geography of the continent, viz.: THE TABLE LANDS—being a longitudinal section (about two-sevenths of its whole area)—intermediate between the two oceans, but walled off from both, and having but three outlets for its waters, viz., the cañons of the Rio Grande, the Colorado, and the Columbia. Columnar basalt forms the basement of this whole region, and volcanic action is everywhere prominent. Its general level, ascertained upon the lakes of the different basins, is about 6000 feet above the sea. Rain seldom falls, and timber is rare. The ranges of mountains which separate the basins are often rugged and capped with perpetual snow, whilst isolated masses of great height elevate themselves from the plains. This whole formation abounds in

the precious metals. Such is the region of the TABLE LANDS. Beyond these is the MARITIME region, for the great wall of the Andes, receding from the beach of the Pacific, leaves between itself and the sea a half valley, as it were, forming the seaboard slope from San Diego to the Straits of Juan di Fuca. This is 1200 miles in length and 250 broad. Across it descends to the sea a series of fine rivers, ranging from south to north, like the little streams descending from the Alleghanies to the Atlantic. These are the San Gabriel, the Buenaventura, the San Joakim and Sacramento, the Rogue, Tlameth, and Umqua rivers, the Wallamette and Columbia, the Cowlitz, Chekalis, and Nasqually of Pugett's Sound. This resembles and balances the maritime slope of the Atlantic side of the continent; but it is vastly larger superficially; of the highest agricultural excellence; basaltic in formation; grand beyond the powers of description, the snowy points and volcanoes of the Andes being everywhere visible from the sea, whilst its climate is entirely exempt from the frosts of winter.

Such, and so grand, is our continent towards the Pacific. Let us turn our glance towards the Atlantic and Arctic Oceans, and scan the geography in our front. Four great valleys appear, each one drained by a river of the first magnitude: 1st. The Mississippi Valley, greatest in magnitude, and embracing the heart and splendor of the continent, gathers the waters of 1,500,000 square miles and sheds them into the Gulf of Mexico; 2d. The St. Lawrence, whose river flows into the North Atlantic; 3d. The Nelson and Severn rivers, into Hudson's Bay; and 4th, the great valley of the McKenzie river, rushing north into the Hyperborean Sea. These valleys, everywhere calcareous, have a uniform surface, gently rolling, but destitute of mountains, and pass into one another by *dividing ridges*, which distribute its own waters into each, but whose superior elevation is only distinguishable amongst the general undulations, by the water-sheds which they form. Around the whole continent, following the coasts of the oceans, runs a rim of mountains, giving the idea of a vast amphitheatre. Through this rim penetrate towards the south, east, and north, the above great rivers *only*, forming at their

debouches the natural doors of the interior; but no stream penetrates *west* through the Sierra Madre, which forms an unbroken water-shed from Magellan's to Behring's Straits.

Thus we find more than three-fifths of our continent to consist of a limitless plain, intersected by countless navigable streams, flowing everywhere *from* the circumference towards common centres, grouped in close proximity, and only divided by what connects them into one homogeneous plan.

To the American people, then, belongs this vast interior space, covered over its uniform surface of 2,300,000 square miles, with the richest calcareous soil, touching the snows towards the north, and the torrid heats towards the south, bound together by an infinite internal navigation, of a temperate climate, and constituting, in the whole, the most magnificent dwelling-place marked out by God for man's abode. As the complete beneficence of the Almighty has thus given to us, the owners of the continent, the great natural outlets of the Mississippi to the Gulf, and the St. Lawrence to the North Atlantic, so *is* it left to a pious and grateful people, appreciating this goodness, to construct through the gorge of the Sierra Madre, a great artificial monument, an iron path, a NATIONAL Railway to the *Western* Sea.

Here we perceive, in the formation of the American continent, a sublime simplicity, a complete economy of arrangement, singular to itself, and the reverse of what distinguishes the ancient world. To understand this, let us compare them.

EUROPE, the smallest of the grand divisions of the land, contains in its centre, the icy masses of the Alps; from around their declivities *radiate* the large rivers of that continent. The Danube directly east to the Euxine; the Po and Rhone, south to the Mediterranean; the Rhine to the Northern Ocean. Walled off by the Pyrenees and Carpathians, divergent and isolated, are the Tagus, the Elbe, and other single rivers, affluents of the Baltic, the Atlantic, the Mediterranean, and the Euxine. Descending *from* common radiant points, and diverging every way *from* one another, no intercommunication exists between the rivers of Europe; navigation is petty and feeble; nor have *art* and commerce, during many centuries, united so many *small* valleys,

remotely isolated by impenetrable barriers. Hence upon each river dwells a distinct people, differing from all the rest in race, language, habits, and interests. Though often politically amalgamated by conquest, they again relapse into fragments, from innate geographical incoherence. The history of these nations is a story of perpetual war and mutual extermination.

Exactly similar to Europe, though grander in size and population, is ASIA. From the stupendous central barrier of the Himmelayas run the four great rivers of China, due east, to discharge themselves beneath the rising sun; towards the south run the rivers of Cochin China, the Ganges and the Indus: towards the west, the rivers of the Caspian: and north, through Siberia to the Arctic Seas, many rivers of the first magnitude. During fifty centuries, as now, the Alps and Himmelaya Mountains have proved insuperable barriers to the amalgamation of the nations around their bases, and dwelling in the valleys which radiate from their slopes. The continent of AFRICA, as far as we know the details of its surface, is even more than these, split into disjointed fragments.

Thus the continents of the old world resemble a bowl placed bottom upwards, which scatters everything poured upon it, whilst NORTHERN AMERICA, right side up, receives and gathers towards its centre whatever falls within its rim!

Behold, then, the FUTURE of America, graven, in the geographical lines and arteries of her symmetrical, ocean-bound expanse! Behold it *foretold* in the oracular prophecies of past and present progress. In geography the antithesis of the Old World, in society it will be the reverse. *Our* North America will rapidly attain to a population equalling that of the rest of the world combined; forming a single people, identical in manners, language, customs, and impulses; preserving the same civilization, the same religion; imbued with the same opinions, and having the same political liberties. Of this we have two illustrations now under our eye: the one passing away, the other advancing. The aboriginal Indian race, amongst whom, from Darien to the Esquimaux, and from Florida to Vancouver's Island, exists a perfect identity in their hair, complexion, features, stature, and lan-

guage. And second, in the instinctive fusion into one language and one new race, of immigrant Germans, English, French, and Spanish, whose individuality is obliterated in a single generation!

At this moment the *maritime policy*, planned with dark genius, and pursued with scrupulous selfishness, palls our march. Nothing behind us in history at all rivals in rapidity of growth, in wealth, power, and splendor, those States masking the seaboard, and called at home "*the Old Thirteen*." Here are cities (and a great number of them), surpassing, at one century old, those of a thousand years, upon the old continents! The States have swelled as fast. This admirable greatness is due to the mastery of the continent which they exercise by majorities in the national councils; to the immense income of revenue which they thus collect and use, and to their monopoly of all foreign commerce. A new and rival seaboard—"a *New Thirteen*"—would halve and distribute all of these. It was *foreseen* how progress, travelling centrally across the continent, was striding point blank to this consummation. To retard this, indefinitely, arose the *maritime policy*, invented by sophistry, and sustained by metaphysics.

Mr. Jefferson having, with consummate prescience, added to our domain the Louisiana purchase, the most splendid portion of the habitable globe, hastened to give it population and a maritime wing to the Pacific. Explorations under Clarke and Lewis, and others, followed by Astor's enterprise, opened, *forty years ago*, the great commercial route between the oceans, since shut up by the *maritime policy*, but now reopened. These were checked and overthrown by the exigencies of foreign war. That over, the discussion of a route to Asia was revived by the press and in Congress; Astor sought to renew his enterprises, and aid was demanded from the Government by the people of the west, and by patriotic individuals in the east. This was refused by the policy of President Monroe's administration, in whose cabinet were conjoined Messrs. J. Q. Adams, of Massachusetts, and J. C. Calhoun, of South Carolina,—subtle statesmen of the most penetrating foresight and the loftiest ambition.

Power emigrates as time rolls on. The pride and fascination

of its possession lingers supremely potent in the human heart. From this profound source has sprung the unequitable *maritime policy*, arrayed against the march of progress and the westward migration of power. The former State, Massachusetts, had proclaimed a national war unconstitutional, and initiated at Hartford the preparatory plans to secede from and dissolve the Union. The latter, South Carolina, has done the same, pronouncing the general power of taxation unconstitutional in a particular form—and now again appear the same dreadful threats of “force and terror,” pronouncing unconstitutional a specific legislation for the territories. Behind this gorgon of alarm (*Nullification*), and unperceived by the general mind, lashed into dismay and distracted by “terror and force,” threatening the Union, the subtle *maritime policy* has been riveted down. Within the young States, the public glebe has been held by the central government and withheld from taxation. Thus is State revenue cut off. These public lands are held at a tyrannical price, the sales made cash, donations of homestead rights, pre-emption, and graduation refused. Savages, ejected from the older States, have been bought up and planted as a wall along the western frontier and across the line of progress. These are metaphysically called foreign nations. Recently there has been given to the soldiers of the nation a bounty of \$100 in money or \$200 in land. This is legislative declaration that the price is 100 per cent. above their highest value. The revenue raised from the customs is collected at the seaports, where the expenses of collection are disbursed. The heavy part of this revenue is paid by the agriculturists of the west, who are the consumers. \$3,000,000 annually of direct land revenue is exclusively paid by these latter. But where is this splendid income of \$40,000,000, thus levied for the most part from western industry, expended? To the navy is devoted \$9,000,000 (all upon the tide-waters of the seaboard). To the civil list \$5,000,000—all *there* also. To *seaboard* improvements, viz.: custom-houses, mints, harbors, breakwaters, fortifications, navy-yards, light-houses, coast survey, post-offices, armories, &c., \$2,500,000. All this too is upon the *tide-water*. To the army \$5,000,000—this is expended on a

military academy, ordnance foundries, four artillery regiments, engineers—all upon the *seaboard*. True it is that a few stingy details of cavalry and infantry are posted in shanties upon the western frontier, and a largess of half a million sowed among the Indians. But the single fortress of "Old Point Comfort," has cost more than the sum total of western military structures. Thus do we come at one cardinal item of maritime power—\$40,000,000 collected annually from thirty States, of which \$39,000,000 is annually paid out to *thirteen only*! Such is the *income* which *maritime policy* secures to itself by taxation. Farther, the foreign exports and imports amount to \$350,000,000 per annum—every pound of this leaves our shores, or comes to us in the ships of these maritime States, and is stored at their seaports. To them, then, belongs the complete and prodigious monopoly of the carrying trade of America! Is it wonderful, then, that a policy should have been projected with foresight and pursued with obstinate will, to preserve to its possessors an income so splendid, and a monopoly of such infinite profit? With these maritime States, too, rests the political mastery of the continent, because they have as yet always had the majority of the Houses of Congress, and still retain that in the House of Representatives, in spite of the accession of Texas, Iowa, and Wisconsin, which have changed the Senate. It is the decennial census of 1850 which will give in the thirty-third Congress a majority to this great indigenous American people, residing within the mountains in the great basins of the continent. To them will belong the glorious task to give to the public domain its true, patriotic use, and root out the scorching tyranny, of which it is now the engine. To make taxation and the expenditures of revenue national, and equal among the States and people. To pay, not grind, the pioneers. To reverse the uses of the national wilderness, so that its glebe shall be the beneficent fountain of great roads, unlimited agriculture, population, commerce, and rich States. To give us maritime rivalry and a new seaboard. To reconcile the white man and the Indian, now kept by infamous laws in a state of implacable feuds and mutual piracy. It is very wicked that our Government, being Republican, has

ravished republican liberty and rights from the Indian, and re-enacted for his race all the odious inequalities and oppressions of *feudality*.

The set purpose of *maritime policy* to crush progress developed itself with the admission into the Union of Missouri, a State beyond the Mississippi, and salient upon the routes and rivers towards the Pacific. A wall of Indians was planted along the frontier from the Missouri to the Red river. These *foreign nations*! were planted upon soil which they could not sell. Commerce was prohibited, and the white man forbidden entrance under penitentiary imprisonment. The army, its duties reversed, was withdrawn from danger, and planted on the line to bayonet back the pioneers. By these nefarious sophistries it was designed to fence across the pioneer army in front. Hush-money to the amount of \$85,000,000 was paid to get these Indians out of the older States for the use of the frontier. In combination with this it was necessary to gain a maritime extension, and the national purse was opened. A couple of thousand Indians were discovered in the pocket of East Florida—the Seminoles and Mickasukies. Ten years of terrible war, during which 100,000 military emigrants and \$45,000,000 had supplied the material of a State to balance Michigan, brought about a treaty allowing those tribes to remain amongst the Everglades! During this time Indian piracies swarmed over the Great Plains and upon the commercial roads to Mexico and the Mountains. Many hundred whites and innumerable Indians fell beneath the tomahawk. Protection, military police, and revenge were denied at Washington. Not a dollar was *here* disposable, for these terrors of the wilderness helped the policy which kept it so.

The reannexation of Texas was consummated. This was a *maritime* State, extending the shell of maritime influence farther round the continent. Texas owed debts—some \$7,000,000. Her public lands were speciously left to her to pay them—208,000,000 of acres, by valuation \$260,000,000, to pay \$7,000,000 of debts!! Is it, then, by chance or by design that the great domain is to one State the source of imperial revenues and advancement, to another of poverty and repression? Ex-

press laws of Congress produce these extremes. To understand this rightly, let us examine it. The soil of Missouri is held until sold at \$1.25 per acre by the central government. At present \$600,000 per annum is extracted in specie through the land offices. Thus are we impoverished. Two-thirds of our soil is withheld from State taxation. As real estate is the substantial source of State revenue, no public enterprises, no geological surveys, no internal improvements, not even highways and bridges, are possible in Missouri. Our insignificant State and county revenues fall with onerous weight upon less than one-third of the glebe lands, upon personal property, and licenses. The disastrous wreck suffered by Mississippi, Illinois, and other new States, is proof enough of this.

How is this reversed in Texas? An immense domain fills her treasury—she taxes and sells for taxes at will—unlimited credit and resources invite her to construct the greatest works, without danger. By reducing and graduating the price of lands, she invites forth the agriculturists of our States, and warps progress towards the Gulf. On the pledge of her public lands she may herself alone procure means to construct a railroad to the Pacific! Across the western frontier is unobstructed access to the 8,000,000 of Mexicans! Western commerce, then, walled in and made piracy in Missouri, crushed and persecuted, must migrate hence to Texas. Again, war with Mexico arose. This was a land war of armies, between nations having a common frontier of many thousand miles. A single American army of 30,000 cavalry and flying artillery, marching by the magnificent road from Fort Leavenworth, passing by the great table lands to the city of Mexico, and subsisting their animals of food and transportation upon the pastures, would have conquered and held all the Mexican States in eighteen months. Forty millions of expenditure would have brought peace on our own dictation—great roads for commerce would have been established for ever, and the disbursements returned to us in the ceded territory. A war thus economically conducted, however, would have opened the avenue and planted central States to the new seaboard. But fleets of transports must plow the Gulf, and the maritime States

of Jacinto and Sierra Madre extend to embrace Tampico. One hundred thousand soldiers were sent to the impracticable entrance by Saltillo and Potosi—one hundred millions expended upon this army, which, stagnating upon the waters of the Rio Grande, never passed beyond them; for Saltillo is upon an affluent of the Rio Grande, and only 250 miles from its main bank. Thus was profligately re-enacted the drama of the State of Florida.

The *maritime policy* blends the double object of blocking up the interior, and extending the seaboard in a shell around the continent. For this the navy is enormously increased and the army emasculated. Enterprises in the central States are marred, but those of the seaboard sustained directly from the National Treasury. Of this let us take a recent illustration.

A proposition was submitted to the Twenty-ninth Congress, early in its first session (1845-'46) to carry onward to the coast of California and Oregon, and to Santa Fé, *monthly*, the mail which comes tri-weekly to our city of Independence. A law authorizing the Postmaster-General to let the contract for such an extended mail route to the lowest bidder, in the ordinary way, was alone required. Contractors were ready to execute the whole undertaking for \$50,000 per annum, carrying the mails in *fifteen days*, making the time from ocean to ocean *twenty-five* days. This proposition, admirable for its practicability, its economy in time and cost, was belabored by orators and suppressed. To this hour all overland mails are prohibited by statute. At this same session of this same Congress, and under the promptings of these orators, the Government was by statute, made the partner with ship-building companies of New York city. To construct four mail steamers, the sum of \$1,250,000 was *advanced* to these companies, to whom was also given the monopoly of future government transportation for ten years. The transportation of *our* mails through the Isthmus is confided to the *Spaniards* of New Granada! All this enormous expenditure has produced at the end of four years, an uncertain monthly mail, *outside* of our country, and exposed to the hostilities of the whole world, which traverses 9000 miles of *sterile* ocean in *fifty days*! In the interval the contracts have been doubled in amount by doubling

the size and cost of the ships. It is a condition of these contracts that these "mail steamers" may be appraised and purchased by Government for the Navy. Thus is the Navy *clandestinely* increased by eight or a dozen war steamers.

Thus, whilst we may transport the domestic mails between our distant people and seaboard through the heart of our territories, every inch upon our own soil, and 1000 miles from any foreign foe or frontier—whilst this can be done and is offered to be done, by our citizens, for prices at which the mails will yield remunerating revenues—whilst this admits of an increase to daily mails at any time, and a reduction of time to one-half—whilst this allows of innumerable way mails, telegraphs, and the most intimate domestic intercourse—involves neither increase of military force nor expenditures by sea or land, and avoids the possibility of foreign interference or molestation—opening roads and crowding them with population and settlements—concentrating to the seaport where it reaches the Pacific, the American shipping and business on that ocean, at once creating a great American emporium. Instead of all this, which is sensible and natural, and understood by our people, whose *cardinal right* it is to have the circulation of their domestic thoughts and business through home channels which are short, safe, and expeditious! Yes, instead of this, we are taxed millions, to have our letters sent 9000 miles in fifty days, under the equator, by sea, through foreign nations, exposed to delay, dangers, and destruction in every form, ruffling the jealousies of rival nations, and exposed to their cannon—and all this to fill the maws of maritime speculators and political ambition.

Such are a few examples of a policy hourly influencing our glorious State for weal or woe, whose effect upon you, my fellow-citizens, fills me with the most puzzling astonishment. You drop your own interests with facility when *told* they are difficult, and inexpedient, and stand at ease, whilst rival enterprises, planned to destroy you, and a thousand times more difficult, costly, and fanciful, are finished completely!

Mr. Chairman, eloquence is not nurtured in the depths of the silent wilderness, and *there* have I passed my youth. Djd I

possess those graces of language and polished elocution, which many youths, my cotemporaries, trained in the courts and halls of legislation, ought to do, then should my voice sound like the *rappel* beat on John de Zitzka's skin, into every cabin of our glorious State, to call forth her citizens, and, roused from their ignoble apathy, animate them to resume their stolen rights, and vindicate their crippled honor. For this apathy is towards this our State and our nation, the crime of the sentinel slumbering on his post.

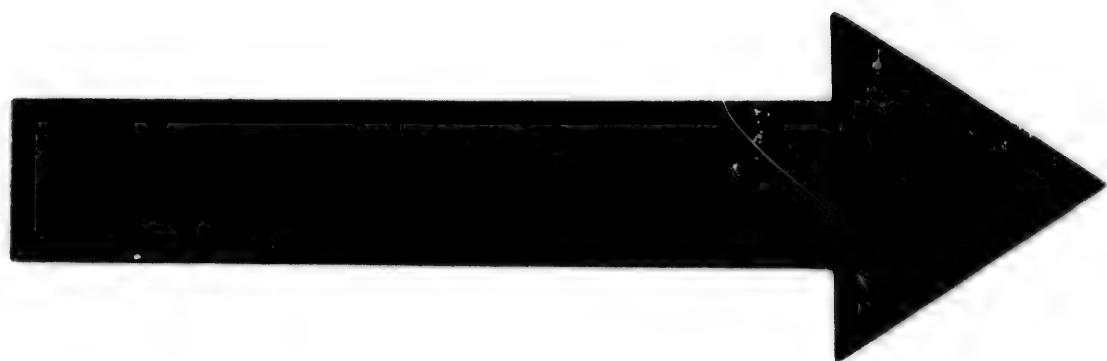
The configuration of the Sierra Madre (the Mother Mountain of the world) is transcendently massive and sublime. Rising from a basement whose roots spread out two thousand miles and more, its crest splits almost centrally the Northern continent, and divides its waters to the two oceans. Novel terms have been introduced to define its characteristics. *Mesa*, expresses the level plateaux of its summits. *Cañon*, the gorges rent in its slopes by the descending rivers. *Bute*, the conical mountains isolated and trimmed into symmetrical peaks by atmospheric corrosion. Everybody has seen the card houses built by children in the nursery. Suppose three of these in a row, having a second story over the centre: this toy familiarly delineates a transverse section of the Sierra Madre. This upper story represents the central, primary *mesa*, of the Cordillera—its summit a great plain, descending on both flanks by a perpendicular wall of 6000 feet to the level of the *second mesa* or steppe. Towards the *west* the second *mesa* fills the whole space to the Andes, whose farther side descends abruptly to the tide level of the Pacific. This is again what has been before described at length as the GREAT TABLE LANDS. But towards the *east*, the second *mesa* forms a Piedmont, rent into peaks by the fissures of innumerable streams. This Piedmont, called by us the Black Hills, masks the front of the Sierra Madre, from end to end. So completely is it torn and rent by the perplexity of watercourses, that patches alone are left to define the original plateau. These are the eastern envelope of the basin of the Yellowstone, the Laramie plain (between the Plattes), the Ratone and the Llano Estacado of Texas. Beneath this the *third mesa* (or steppe), is that superlative region, the

GREAT PRAIRIE PLAINS, whose gentle slope forms a glacis to the Gulf through Texas, and in front to the trough formed by the Mississippi river from Itasca Lake to the Balize. Neither are the other three basins of the St. Lawrence, Hudson's Bay, and McKenzie anything else but prolongations of this same glacis, sloping towards the east and north.

It is this vastness of geographical configuration which leads the *glance* of the engineer with unerring certainty to that line of natural grades from ocean to ocean, the discovery of which mankind now awaits with the keenest curiosity, and along which the American nation is resolved to construct the consummate work of art—the Asiatic and European Railway.

Advancing north along the comb of the Sierra Madre from below Mexico, you find at the sources of the Platte (Sweetwater) a wide gap, where, the high mesa suddenly giving out for the space of forty miles, the second mesa passes through from east to west, the continued water-ridge being scarcely perceptible amongst its gentle undulations. This is the *SOUTH PASS*. It is so named as being the *most southern* pass, to which you may ascend by an affluent of the Atlantic and step immediately over on to a stream descending directly to the Pacific. This name is as ancient as the pass itself. Into it concentrate the great trails of the buffalo, geographers and road makers by instinct, before the coming of man. The Indian, the Mexican, and the American, successors of one another, have not improved or deflected from the instincts of the buffalo, nor will they whilst the mountains last in their present unshattered bulk. The South Pass has a towering grandeur, in keeping with the rivers between which it is the avenue (the Missouri, the Colorado, and the Columbia), all of which issuing from the wall of the Wind River Mountain, come out of it on to the Second Mesa, *at the same level*, and into which they immediately commence burrowing their cañons of descent to the seas.

Here then is the route, the *Southern* route, of the National Railroad, ascending by the water-grade of the Platte on to the top of the second mesa, where it forms the summit, following the level of this mesa along the base of the high mesa, to the Colum-



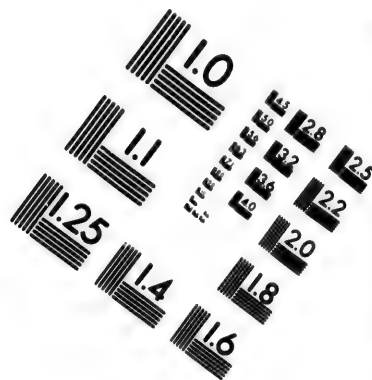
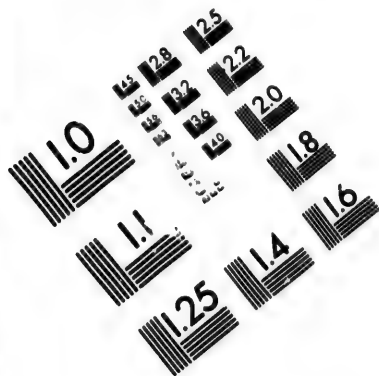
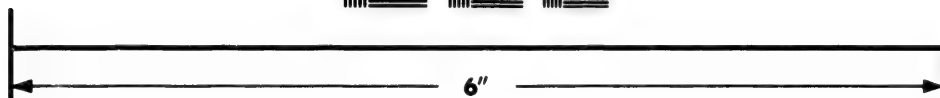
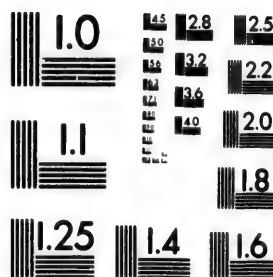
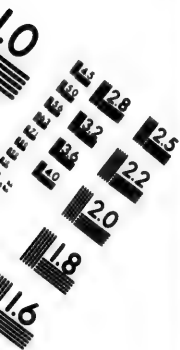


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bia (Snake river), and descending its water-grade clear out to the Pacific. The distance from the Platte to the Columbia has not been accurately ascertained, though by the present wagon road, which crosses a corner of the Salt Basin, it is less than 300 miles. Here is that double inclined plane, to find which has been the first essential in every work of art existing in the world. There is none *south* of this, because everywhere the basins of the Table Lands overlap and envelope one another; nor are there any natural tunnels through the precipitous walls of the Andes, and between the basins. The Columbia, running across the Table Lands from east to west, distributes the descent of 8500 feet, equally along its course of 1200 miles, and tunnels the great ranges of Blue Mountains and the Andes. This whole course of the river is a continuity of rapids having three falls—the American falls of 30 feet at Portnoëuf, the Salmon falls of 45 feet 200 miles below, and the Chuttes of 12 feet near the Dalles. This river-grade is then as rapid as the descent to be accomplished will admit of; for, distributed into long levels and steep grades, it would immensely impair the utility of the whole work, and fatally impede transportation. The great Colorado runs diagonally across the TABLE LANDS, debouching into the Gulf of California; but has its course and those of its great affluents, parallel with the mountain ranges, which are scored with unfathomed cañons, perplexing the traveller with an infinity of impassable ridges, amongst which the watercourses are embowelled. North of the South Pass, however, exist many single passes where the higher branches of the Missouri and Columbia interlock. These circuitous routes have all the same termini as that of the South Pass, for they also descend the same two rivers to the seas. Thus between the South Pass and the isthmus of Tehuantepec there exists no railroad route, owing to the longitudinal courses of the rivers, the complexity of the basins, and the double barrier of primary mountain chains. To the north, other passes exist, which future generations may develop, and on which navigation may be used for four-fifths of the whole distance. True it is that potential fashion now exalts the little maritime basin of California, San

San Francisco Bay, into the haven of hope and fortune of the new seaboard, whilst the sublime basin of the Columbia, and its magnificent *river harbor*, are banished from public favor. The basin of San Francisco is small, tropical in climate, sterile, and the most isolated spot, to reach from the interior, on the whole coast of the Pacific. No great river gives it access to the Mississippi Valley, from which it is cut off by the basins of the Salt Lake, the Colorado, and the Del Norte, overlapping each other. The Columbia is larger than the Danube, and equal to the Ganges. In size, climate, agricultural excellence, capacity for population, and its wonderful circular configuration, the basin of the Columbia surpasses both of these others. The mouth of the Columbia, a salient point upon the open coast, more than any other central and convenient to the whole North Pacific and Asia, is in size, depth of water, safety and facility of ingress or egress, equal to San Francisco. As the mouth of the greatest river descending from our continent into the Pacific, it is infinitely before it. It is eight degrees south of Liverpool, having the climate of Bordeaux, Marseilles, or Savannah. Why is not the deep sea navigation concentrated at Norfolk or Hampton Roads, the finest harbor of the whole Atlantic? Why rather is it found at New York and New Orleans, accessible only through every danger that can menace shipping? Why, because the former is the outlet of the basin of the St. Lawrence, the latter of the Mississippi. The shipping of commerce goes to where cargoes can be found. Less than fifty years ago *fashion* pronounced the little ravines of James' river and the Connecticut the proud spots of America, and held the great uninhabitable wastes of the Mississippi and its *unnavigated* streams as worthy only to balance *cod fish*! This same splenetic spirit of *fashion* now manufactures a similarly ridiculous misdirection for the energy of the pioneers, by setting up what the geologist would call a "pot hole of the Andes," against the grand Columbia. Commerce, provident like every other department of industry, makes herself harbors with charts, pilots, buoys, and beacons. The shallowest channel of the Columbia has thirty-five feet water—the deepest of New York, twenty-nine.

Climate distinctly controls the migrations of the human race, which has steadily adhered to an isothermal line around the world. The extremely mild climate of our western seaboard is only the consequence of the same great laws of nature which operate in Western Europe. These are the regular and fixed ordinances of the code of nature, to which the migrations of man, in common with the animal, yield an instinctive obedience. Within the torrid zone and up to 30° of the northern hemisphere, blow the *trade winds* and *variables*, constantly from the east and north-east all around the world, but the upper halves of elliptical orbits followed by the winds lie in the temperate zone, from 35° to 60° , within which the winds flow constantly from the west and south-west all around the world. These winds reach the *western* coasts of America and Europe after traversing the expanse of the Pacific and Atlantic Oceans. Warmed to the same temperature as these oceans, they impart again this same mild atmosphere to the maritime fronts of the continents which receive them. These same winds, passing onward over great extensions of continent of low temperature, covered with snow, or frozen during winter, often warped upward by mountain ranges, becoming exhausted of their warmth, have upon the eastern portions of both hemispheres an exactly opposite effect upon the climate. Hence the variant temperature of New York and Lisbon, which face one another on the opposite coasts of the Atlantic—of Pekin and San Francisco, similarly opposite upon the Pacific. At San Francisco and Lisbon the seasons are but modulations of one continuous summer. At New York and Pekin, winter suspends vegetation during seven months, whilst ice and snow bridge the land and waters. These four cities are all close upon the same parallel of latitude, the 40th degree.

It is here manifest how in Asia, the masses of population lie below the 40^{th} , in Europe above and again (so far) in America, curving downward on the eastern face of our continent, to rise again to the north upon the warm coast of the Pacific. Thus has the zodiac of nations, our own nation similarly with the rest, pursued a serpentine line of equal temperature, retaining all around the world similar employments, similar industrial pursuits,

similar food and clothing, requiring similarity of climate, and recoiling alike from the torrid and the arctic zones.

The *scientific men* of the nation oppose the National Railroad —so did those of Europe persecute Galileo and Columbus. Science, like the army and navy, is fed from the national revenues, which maritime policy distributes to all that serve its ends. Science is rare; the spurious quackery of science redundant. It is not the scientific doctors of the schools, the bureaux and military wings of government, that have hewed out this republican empire from the wilderness. This has been reared by the genuine heroism and sublime instincts of the pioneer army, unpaid, unblest, nay scoffed and loaded with burdens by government and its swarm of dependants. To bridle PROGRESS has been the policy of thirty years. To keep the people out of the wilderness. To refuse Territorial governments, and prevent Territories from becoming States. At this moment *scientific men* are especially busy distracting us with multitudinous routes and invented difficulties, devised to perplex and scatter the energies of the citizens, whose unanimous resolve it is to plough open a great central trail to the Pacific. Science cannot unmake the eternal ordinances of nature, and reset the universe to suit local fancies and idle fashion. It is the humble duty of science to investigate nature as she is, and promulgate the truths discoverable for the guidance of governments and men.

The experience gained from the great works constructed by the last generation, in digging through the Alleghanies routes for commerce to the Atlantic, settles for us the rules that shall guide us across the Sierra Madre to the Pacific. In 1818 the State of New York cut through the low and narrow ridge between Rome and Syracuse, the former on an affluent of the Hudson, the latter of Lake Ontario. Thus the *first* expenditures, perforating the dividing mountain, let through that infant commerce, which in thirty years has grown to such a grandeur of quantity and profit, that this great thoroughfare is itself quadrupled in capacity and lengthened out to Montreal, to Boston, to New York city and into Pennsylvania, towards the east. Westward, it reaches through Ohio and Indiana to the Ohio river, and by the Illinois

and Wisconsin rivers to the Missouri and Mississippi. What the single State of New York, of 1,200,000 population, accomplished by her own intrinsic bravery and resources, undismayed by ridicule and unappalled by the *then* experimental character of such works in a republic and upon our continent:—just such a work now invites the national bravery, power, and wealth of this imperial republic; namely: to lay, over the dividing barrier of the Sierra Madre, along the floor of its natural tunnel at the South Pass, an *iron pathway*, which, descending the grades of the Platte and Columbia to the highest points of navigation, shall let through the first infant stream of that supreme Oriental commerce, whose annually expanding flood will, during our generation, elongate its arms and fingers through all the States and to every harbor of the two seaboard.

Climate, the configuration of the continent, the location of our States and people, the isothermal line of progress, the high latitudes of the ultra-oceanic nations *here* locate the "National Railroad." The climate is here most favorable, because the whole region from the Missouri to the Columbia, far removed from any ocean, is so dry as to be free from rains in summer and *snows in Winter*. Thus the snows within the South Pass itself are not so deep as upon the St. Lawrence, or between Boston and Buffalo. Upon the Wind River Mountain there is no snow in summer, at an altitude where it is perpetual on the Andes beneath the equator and near the ocean! On the Table Lands rain and snow are so rare that they may be said never to occur. This obstruction, then, stated on theory to be fatal, has no existence—whilst this route pursuing great rivers all the way has abundance of water. Mineral coal is abundant from end to end. Lumber and rock infinite in quantity and convenient in position.

It is, then, I repeat, through the heart of our Territories, our population, our States, our farms and habitations, that we need this broad current of commerce. Where passengers and cargo may, at any time or place, embark upon or leave the vehicles of transportation. It is foul treason to banish it from the land, from among the people, to force it on to the barren ocean, outside of society, through foreign nations, into the torrid heats and along

solitary circuitous routes, imprisoned for months in great ships. This central railroad is an essential domestic institution, more powerful and permanent than law, or popular consent, to thoroughly complete the great systems of fluvial arteries which fraternize us into one people; to bind the two seaboard to this one nation, like ears to the human head; to radicate the foundations of the UNION so broad and deep, and render its structure so solid, that no possible force or stratagem can shake its permanence; and to secure such scope and space to progress, that prosperity and equality shall never be impaired or chafe for want of room.

What, sirs, are these populous empires of Japan and China, now become our neighbors? They are the most ancient, the most highly civilized, the most polished of the earth. It was from Sinim (China) that the Judean king Solomon imported the architects, the mechanics, the furniture of his gorgeous temple. Hence, the Tyrians brought tapestry, carpets, shawls of wool, cotton and silk fabrics, wares of porcelain and metals, dyes, gums, and spices, jewels polished and set. Hence, came the climax of all human inventions, *letters and figures*, which fix language and numbers, making them eternal; astronomy, arithmetic, algebra, decimals, chemistry, printing, navigation, agriculture, and horticulture. All these, erroneously ascribed as the inventions of the Arabs or to the exiles of Constantinople, who brought them into Western Europe, are the *creations* of Oriental genius and study. Tea, sugar, the peach produced from the wild almond, the orange from the sour lime, the apple from the crab, the fruits, the flowers, the vegetables of our gardens, are the *creations* of Chinese horticultural science. The horse, cattle, the swine and poultry of our farms, come to us from thence. The culture of the cereal grains, wheat, rice, barley-bread, wine, the olive and silk, have come to us from the farthest Orient. Hence also came gunpowder, the magnetic needle, and calomel. The paints, varnish, and tools of the art have come, and the remedies used in pharmacy.

Our historic records, *commencing* with the arrival of progressive civilization at the extremity of the Mediterranean, relate from tradition the antique empire of Bacchus and the religion of

Zoroaster upon the Ganges and the Indus. The Chaldeans of the Persian Sea followed. Fleets came from the extreme Orient into the Bengal Sea, the Persian Gulf, and the Red Sea;—and caravans overland by the Oxus and the Caspian brought the camel, the horse, cattle, manufactured wool, silks, cotton, and metals, agriculture, commerce, and coin. Empires expanding westward along the Ganges, the Euphrates, and the Nile, reached to the Mediterranean and Euxine. From Egypt, Phenicia, and Colchis (Trebisond), sprung European Greece. Such as *Progress* is to-day, the same has it been for ten thousand years. It is the stream of the human race flowing from the east to the west, impelled by the same divine instinct that pervades creation. By this track comes the sun diurnally to cheer the world. Thus come the tides of men and of the waters, learning, law, religion, the plague, the small-pox, and the cholera. The sources of life and happiness—the pestilence that saddens both. These empires of which we have spoken have left upon the ground they occupied their names, political society, their organized systems of government and religion. Does not society then, once founded become perennial? It is within a belt of the earth straddling the 40th° of north latitude that the greatest mass of land surrounds the world, and where the continents most nearly approach. Within this belt (from 30° to 50°) four-fifths of the human race is assembled, and here the civilized nations, of whom we possess any history, have succeeded one another, commencing at the farthest extremity of Asia, and forming a zodiac towards the setting sun. This succession has flowed onward in an even course, undulating along an isothermal line, until in our time the ring is about to close around the earth's circumference, by the arrival of the American Nation on the coast of the Pacific, which looks over on to Asia. In this age and in this march of human race, as elsewhere, the bold, energetic, and indomitable, the picked spirits of the world lead the van, and such is the pioneer army.

What means that expression in the Declaration of Independence, "life, liberty, and *the pursuit of happiness*?" What brought the Cavaliers to Virginia in 1608? It was "the pursuit of happiness." What animated the Pilgrims to endure the rigors

of Plymouth Rock? Why, "the pursuit of happiness." What sought Boone and his companions plunging a thousand miles into the wilderness? This same "pursuit of happiness." What secret motive now brings foreigners to our shores, and impels our own citizens onward to the Pacific? Again, it is "the pursuit of happiness." *Progress*, then, is one of the immortal RIGHTS sanctified in the Charter of human Liberty. Why, then, is advent into the wilderness, the field for the discontented, the oppressed, the needy, the restless, the ambitious, and the virtuous, thus closed by a policy at once sinister, nefarious, and unconstitutional? Unquiet for our sacred Union is this present time, when political power, about to cross the Alleghanies, see-saws on their crests, counting the days that precede her eternal transit over them! It is by the rapid propagation of new States, the immediate occupation of the broad platform of the continent, the aggregation of the Pacific Ocean and Asiatic commerce, that inquietude will be swallowed up, and the murmurs of discontent lost in the onward sound of advancement. Discontent, distanced, will die out. The immense wants of the Pacific will draw off, over the Western outlets, the overteeming crops of the Mississippi Valley. Thus will the present seaboard States resume again their once profitable monopoly of the European market, relieved from the competition of the interior States. The cotton and rice culture of Georgia and the Carolinas will revive. The tobacco of Virginia and Maryland will again alone reach Europe. Ships withdrawn from the Northern States to the Pacific, will regenerate the noble business of nautical construction in New England and New York. The established domestic manufactures of clothing and metals will find, in our great home extension, that protection which they in vain seek to create by unequal legislation, noxious and impracticable in our present incomplete and unbalanced geographical form. Thus calmly weighed and liberally appreciated, does this great Central Railroad minister to the interests, and invite the advocacy and co-operation of every section of our territory, and every citizen of our common country.

The exclusion of foreigners from Japan, China, and Cochin China is not then an institution of barbarism, but a domestic

tariff of protection. It is designed, like the combination of Christian nations against piracy, to protect their nationality and freedom against those fierce military nations of NORTHMEN, who for twenty centuries have rent Europe and Western Asia with perpetual massacre; who ransack all the seas in their war ships: store the rocks of the ocean with munitions of war, crush the millions of India with cannon and the bayonet: plunder Africa of a million annually of her swarthy children to rot in foreign slavery: and even exterminate one another in deadly strife when they meet amongst the antipodes, in the solitudes of the Southern Ocean. When, however, *our* diplomacy shall receive a wise direction—when *our* foolish nepotism to Europe shall be run out—when men of sense, such as Franklin was of old, shall sail over from Astoria to Peking, and there converse, with the Oriental Court, of Republican America as she is—when her civic growth and pacific policy shall be there understood—when the central position of our continent shall be known, forming the avenue for trade and barrier against war with the Northmen of Europe—then will mutual confidence between these, the oldest and youngest of the human family, the extremes met, show itself in the graces of a free commerce, and the ties of an harmonious fraternity. It is for you especially, people of Missouri, to seek these new relations with the Oriental people, with the zeal of faith and the fixed will of conviction. It is arch mockery for us to be duped by the flippant caricatures of these ancient and polished Asiatics, invented by British envy to mislead us, and fed out to us by the British press to cloak sinister designs of subjugation and world-wide plunder. Rather let us take alarm at the tone and source of this monstrous flood of calumny, and know that a direct inspection for ourselves will reveal to us in Asia empires of people illustrious for their antique civilization, rendered enduring and perfect by political equality, and wise civic institutions, winnowed and renovated during fifty centuries of uninterrupted experience—amongst whom the science and art of war, indeed, are decayed from long disuse, but all useful sciences highly perfected—with whom government has reached the mildest form of patriarchal despotism, eliminating political

priestcraft and the disseminated tyranny of a patrician order—who have so admirably refined and perfected municipal government and police, that 400,000,000 of population (double that of all Europe) are united under one harmonious political system in concord and tranquillity.

It is among these swarming hives of ingenious people that we will find markets on a scale commensurate with our own prolific industry. This is not now the case in Europe. The Europeans are in all things our rivals and competitors. Are we agriculturists? So are they, and wall off our competition with corn-law tariffs. Are we miners and manufacturers? So are they, and overtop us by abundance of labor and capital. Are we ship-owners? So are they, having an immense marine cheaply navigated. They conquer and colonize foreign countries, of whose trade they make monopolies! They are northern nations, whose clothing is of wool and flax, consuming a very limited amount of cotton. What they take from us is to manufacture for exportation. Tobacco is prohibited—hemp and metals they export. The population of Europe is 205,000,000—of the Atlantic all round, 253,000,000. On the Pacific, in front of us, are 400,000,000 people of the tropics—Polynesians, South Americans, Southern Asiatics—amongst whom wheat is not cultivated, and animal food, other than fish and poultry, very scarce. Their clothing is exclusively cloth of cotton, grass, and silk. Opium is excessively used amongst them. Rice, the plantain, banana, and fruits are their unsubstantial diet. Here, then, will be the market for raw and manufactured cotton. Here our rank manufactured tobacco will substitute itself for opium. Here our substantial articles of food—flour, meats, and fish—will find purchasers in all who eat. Lead and hemp will be sold. In return will come to us groceries, spices, teas, coffee, sugar—porcelain, Japan ware, furniture, works in ivory—drugs, paints, dyes, medicines—beautiful fabrics of silk, satin, velvet, crapes; nan-keens, the delicate shawls of Cashmere, the carpets of Persia—jewelry, trinkets, and toys—the hemp of Manilla—luscious fruits dried and preserved. The people of the Pacific have no marine adapted to cross the great ocean—the carrying to and fro

will be in our ships, and a monopoly to us—ship-building and navigation will occupy our people of the new seaboard, and the metals, lumber, and hemp of the interior find a prodigious demand. The population of the Pacific all round exceeds 645,000,000! Will not then our people find in this, that certain panacea of all their wants and wishes, namely, an infinite market of consumption? Surely this people, which has submitted to the nostrums of political quackery, tariffs of protection, banks to make money plenty, home manufactures and systems of internal improvement, all invented to create markets at home, by changing our producing agriculturists into consuming operatives, but all of which little experiments have produced industrial anarchy and commercial bankruptcy; surely this people will not hesitate to construct for themselves this great "National Highway," at small comparative cost, and leading as level as a cannon to its blank, to a new ocean, teeming with 645,000,000 of people, of wants unlimited, and having a genius active, intelligent, and commercial! To effect this, it is only necessary to untrammel progress from the snares and dead-falls of maritime policy. To re-open the legitimate onward trail of the pioneer army, and reinvigorate its march. The cause of the pioneers at this hour pre-eminently *demand*s the undivided energies of Missouri. It is for us that the pioneer army is *now* conquering the vast wilderness that hems in our commerce and blocks the frontier: for us it throws down the perfidious Indian wall: reopens the central trail of advancement so long insidiously closed—and to us, for us, it re-establishes that crowning excellence of position of which hostile policy has for thirty years bereft us.

It is not ambition that impels *us*, citizens of Missouri, to advance to the advocacy of this great work with our whole unshackled energies—it is high religious duty. Central to the continent, to its internal navigation, to its States, to its commerce, and to its variety of agriculture, neutral to all sectional antipathies, and the converging heart of all interests: **WE** must occupy this central position with a power and dignity equal to its importance, with a strength of grasp and intensity of enterprise to cope with the tallest exigencies. Let us appreciate this, and

stand up to the work with hearts of controversy and sinews of endurance, that the fame of our glorious State, sallying forth from her seat in the centre, may resound in and outward all round from the centre to the circumfluent oceans!

Observe the foreign commerce of America, and the splendid marine which it sustains! This has grown up in 200 years. But compare with it the commerce and navigation of the interior, grown up in less than forty years, for such is the age of steam navigation on the rivers and lakes. The latter already equals the former, for it transports internally what is consumed at home, as well as what is collected at the seaports for exportation. Thus St. Louis, in the amount of tonnage arriving and departing annually, is the fourth city of the Union, ranking next to Boston. Indefinitely grand is this domestic, internal commerce. Let us compare the two. The commerce between New York and Liverpool, 3500 miles asunder, requires powerful vessels of great size and strength to carry much and resist the storms of the ocean. The intervening space is a desert waste of salt water. A vessel of 600 tons must be filled with cargo before her departure, to make so long a voyage profitable. She goes to Liverpool and back—sails 3500 miles, touches only two points of land, and carries two loads—four months of time at least, is consumed in this. Such are the voyages of ocean commerce—expensive, dilatory, and full of dangers. Compare with this the river voyage. From Pittsburg (or New Orleans) to Fort Union, the distance is 3500 miles, by the Ohio and Missouri rivers—a steamer of 600 tons, cheaply constructed and navigated, performs the voyage to and fro, with perfect safety, in two and a half months, and absolutely without danger, along a continuous river channel. This channel has a double bank, so that this vessel coasts along a shore of 14,000 miles, at any square rod of which she may take in and discharge passengers and cargo. Thus it is possible that no single passenger or cargo remains on board over 100 miles, and yet the vessel is full throughout the voyage. These same advantages belong to railroads traversing populous countries. Such is our internal navigation—cheap, expeditious, and absolutely without danger.

Now the circuitous seaboard surrounding the Atlantic may be estimated at 69,000 miles, with harbors indenting it—but small vessels cannot navigate the broad sea, nor large vessels enter all the harbors. On the other hand, within the united basins of the St. Lawrence and Mississippi, is a continuous river navigation for 45,000 miles, having a double bank or 90,000 miles of coast, the whole extent of which may be visited by the same steamer, which can land anywhere! Such is one illustration of the supremely beneficent formation of this great interior basin, of which our own State occupies the centre and focus. Let a railroad from the Missouri elongate this to the Pacific, carrying population clear up all the rivers to their sources and down those beyond the Sierras, and behold the greatness of an *internal* commerce!

Everybody is acquainted with the commercial intercourse between the continents which fringe the Atlantic. The life, the vivacity, the grand energies which resound upon its buoyant waves. All this is the result of the discovery of America and its population with European stock—hence all this has its growth! Antiquity had for its field the Mediterranean, and galleys sufficed. This was commerce in its infancy, confined to the nursery and content with toys. Since Columbus, America has become greater than the Europe of Columbus—and as this period has expanded the field of human activity from the Mediterranean to the Atlantic and Mediterranean, from Western Europe to America and Europe, blending all this vast space under one international relationship. So now we advance to consummate the blending of the Pacific with these other seas:—Asia with these other continents—and urge to its goal that expanding progression, which marches on to complete the zodiac of the globe, and blend into bonds of confraternity all the continents, all the seas, and all the nations!

In the vast region of North-Western Texas, traversed by the rivers Brazos, Trinity, Rio Roxo, Canadian, Arkansas, and Del Norte, exists a fertile region much larger than France, the dryness of whose climate, whose red soils, impregnated with the sulphate of lime (plaster), and whose altitude, present in perfect combination the qualities for the cultivation of the grape and the

production of wines. These rivers all have their sources in prodigious mountains of plaster, from which the red tinge and the fertility of their valleys below is derived. Natural vineyards, covering millions of acres, and annually pruned down by the nibbling herds of buffalo and antelope, here now yearly waste an infinite vintage. This has already become known to the German pioneers of Texas, and soon will be seen rising a vine culture, rivalling in national importance the cotton culture, the tobacco crop, and even the production of provisions. Then too will be seen the universal consumption of mild and healthy wines by our people, and the gay and exhilarating spirits which generous wines inspire, will transpose the fell passions and fiery madness of alcohol.

Again, the region of gold and precious metals and stones is not limited, but is absolutely infinite. It is over the whole extent of that primary and volcanic formation extending from the antarctic to the arctic extremities of America, including in its expanse the Andes of South and North America, the Sierra Madre and the Table Lands. This abundance of the material of coin, wrought and developed by sober American industry, is to the human race the supremest gift of Divine Beneficence. Has not the American cotton culture obliterated harsh aristocratic distinctions in dress, and thus democratized the costume of society over the world? What cotton has done for equality in dress, the same will gold effect for individual equality in property and physical comforts. Study how the stiff, icy servitude of European feudal times has melted, since the conquests of Cortez and Pizarro opened the sources from which portable personal property has exalted itself above fixed and immutable glebe land!

Beyond the Sierra Madre, upon the Great Table Lands, in a parallel vein of thin mountains, whose masses consist of rock-salt. As streams elsewhere bring down gravel and soil, so here they liquefy the rocks down which they descend, and reaching the small inland seas and lakes, yield it again in the crystalline coverings which pave their bowls. In another parallel vein is a continuous line of plaster mountains. In another, a continuous line of thermal and medicinal springs, some of which are the first

appearance above ground of subterranean rivers, having flowed hundreds of miles under plains of lava. Secondary basins of great size abound, having freestone, marble, and coal formations—iron, lead, and the metals of the arts. All forms, indeed, into which geology classifies matter, here follow one another in appropriate positions and proportions, with the regularity of the stripes of the rainbow, the whole deriving prominence and distinctness of detail from the immensity of the general scale.

Thus, instead of inferiority in abundance and variety of things used by and useful to man, it is here that they especially abound in variety, good quality, and vastness. *Across* all these must pass any highway connecting the two oceans, distributing outward the infinite natural resources of this intra-montane world. No other portion of the world will better accommodate a dense population than these Table Lands, on which further south, is the chief population of Mexico. In the dryness and salubrity of its climate, its extraordinary pastoral excellence, and its mineral wealth, are the equivalents of the richer lands, but uncertain seasons and health of countries of less altitude. Its intermediate position will secure perpetual communication with the seaboard.

An admirable economy of arrangement given by nature to the industry of our people, points with great power to this central route, which also corresponds to the positions and courses of the great navigable rivers. In New England and at the extreme north, where winter dwarfs agriculture, there are no planters, but ships are built, owned, and navigated. Here are the marine of America, her sailors. On the shores of the Gulf, and where southern warmth invites man to agriculture, no ships are built, owned, or navigated—the people here plant and produce cargoes for the ships of the north—not a native sailor is found in these countries. Between these, occupying a broad central belt, are the farmers, producers of food. These latter equal in number the other two combined. The farmer recoils from a southern sun, where heat forbids labor, and where the culture of wheat and swine languishes—in like manner, he recoils from the long winter of the north, where cattle and Indian corn cease to yield abundantly. It is this central farming population which feed

the commercial people of the North and the planting people of the South, and support themselves and furnish for export. They precede all other occupants, and head the movement into the wilderness, where the first requisites are food and transportation. Yet it is amongst the farming population that domestic commerce finds its great volume of employments—and amongst them are required, first and chiefly, the great channels of trade which find their termini amongst the other two. It is this mass, which, stopped by the artificial network of *maritime policy*, is now rushing through and tearing its meshes from their fastenings. In resuming their ancient vigor, concentrated by long restraint, they now demand a National Railway to the ocean which they seek.

What I have here stated, Mr. Chairman and fellow-citizens, of geographical facts, are of my own knowledge; for with the works of Lewis and Clarke, Fremont, Emory, and Humboldt, I have during six toilsome years of war and exploration, traversed the countries they describe and the vast intervals between, which *they* have never visited. In these wanderings, undertaken of my own will, I have descended the Andes to the Pacific and returned; crossed and recrossed by many routes all the basins of the TABLE LANDS, excepting only that of the City of Mexico, and coasted along the base of the Sierra Madre from 45° to 25° . This "mother range" I have crossed and recrossed at six different passes in this long interval, and its supreme grandeur is stamped indelibly in my memory. What I have said of *policy* is from the mouths of those eminent statesmen who have contrived it, and those equally eminent who have unsuccessfully opposed it.

I have expressed my convictions very positively, but not modestly; for in the terrible vastness of these solitudes, nature speaks her iron will from summits of eternal ice, and where she frowns upon our advances, our foolish efforts shrivel into ashes. It is, then, this stern and certain language of nature that I have sought to penetrate, and here struggle to repeat. Many routes for a National Highway, cunningly contrived and speciously reasoned out, are before the people—all these will vanish beneath exact geographical scrutiny, for they violate nature at hap-hazard,

with whom human skill must act in unison. This unison is happily attainable, and discussion will reveal it.

Let us, then, understand nature rightly—let us cease from conflict, and further our onward march in unison with her beneficent aid and guidance. This great work *must* come and come now, *to this generation*. No difficulty lies in the enterprise itself—but such as will instantly vanish before the concentrated will and energies of the people.

II.

PROCEEDINGS OF A MASS MEETING

OF THE CITIZENS OF JACKSON COUNTY, AT INDEPENDENCE,
ON THE 5TH OF NOVEMBER, 1849, TO RESPOND TO THE
ACTION OF THE GREAT NATIONAL RAILROAD CONVENTION,
HELD IN ST. LOUIS ON THE 15TH DAY OF OCTOBER, 1849.

ON motion of Mr. J. W. Modie, Col. JAMES CHILES was appointed Chairman, and on motion of R. G. Smart, Esq., J. R. PALMER was appointed Secretary.

Col. WM. GILPIN was then called upon to address the meeting, and explain its object. He responded to the call in a speech which interested and occupied the attention of the meeting for about one hour and a half; in conclusion he moved the appointment of a committee of twelve to write and report to the meeting resolutions responsive to the action of the great Convention at St. Louis. The motion having been adopted, the Chairman appointed as the Committee: Col. William Gilpin, A. Brooking, Gen. S. D. Lucas, Samuel Ralston, Maj. Robert Rickman, Col. James M. Cogswell, James Patton, Esq., Col. Oliver Caldwell, R. G. Smart, Esq., William R. Singleton, Alexander Collins, and S. H. Woodson, Esq.

The Committee, after consultation, reported the following resolutions, which were unanimously adopted:—

1. *Resolved*, That we heartily and zealously approve of, and concur in the proceeding of the "National Railroad Convention," held at St. Louis on the 15th ultimo.

2. *Resolved*, That in the great national work, that shall connect the two seaboard of our country, and the interior with the seaboard, we behold an enterprise as universal to the inhabitants of our Union as their language, their politics, and their commerce—a bond of unanimous action, and not a bone of contention and strife.

3. *Resolved*, That to the people of the "Valley of the Mississippi," intimate and direct connection with the seaboard and people of the Pacific, is as essential and as interesting as with those of the Atlantic.

4. *Resolved*, That, inasmuch as our people in their natural progressive growth have extended their habitations across the continent, and along the western seaboard, it is our duty, and the duty of our Government, to give to this new seaboard, fleets, fortifications, and arms for defence—harbors, light-houses, and marine police, for the encouragement and protection of commerce and highways—and a military police to confirm and make safe the connection with the interior.

5. *Resolved, further*, That a NATIONAL RAILROAD from the Mississippi to the Pacific is the most direct, economical, and constitutional means of effecting the above objects.

5. *Resolved*, That, whereas the Almighty has placed the territories of the American Union in the CENTRE, between Asia and Europe, and the route of the "Asiatic and European Railway" through the heart of our national domain, it is our duty to the human family to prosecute, vigorously, through its new channel, that supreme commerce between the Oriental Nations and the Nations of the Atlantic, which history proves to have existed in all ages, and to be necessary to keep alive comity, science, and civilization among mankind.

6. *Resolved*, That, whereas the people of China, Japan, Polynesia, and Southern America now receive from British India *agricultural produce* (raw and manufactured cotton, indigo, opium, rice, wool, &c.), to the amount of \$150,000,000, annually;

we believe these same people will take from the Americans *in preference*, more than twice this amount of agricultural produce (substituting tobacco for opium, and flour and meats for rice) so soon as the barrier of the Rocky Mountains be removed by a National Railway.

7. *Resolved*, That apart from the great benefits which shall accrue to us and the other nations of the Atlantic from this National Railway, we regard it as a beneficent *domestic* work, to open to our people access to the immense and glorious domain of the Plains, the Sierra Madre, the great Table Lands, and the Andes, known to abound in metals, mountains and lakes of salt, mountains of plaster and marble, thermal and medicinal springs, wild cattle, salubrious climates, sulphur, coal, lumber, arable and pastoral lands of the finest quality, and staple productions unlimited in variety and abundance.

8. *Resolved*, That, whereas, during the last thirty years, the generation of our fathers has covered the eastern half of our continent with States, and, commencing with the New York Canal in 1818, has everywhere rendered the connection between the "Valley of the Mississippi" and the Atlantic seaboard complete, and carried the commerce of the Atlantic to the grandest development—it is the high and glorious mission and duty of us their sons and heirs, of the growing generation, *in like manner*, to cover the western half of the continent with States, to render complete with great works the connection of the "Valley of the Mississippi" with the Pacific seaboard, and expand upon the Pacific Ocean a similarly magnificent commerce.

9. *Resolved*, That we earnestly entreat our fellow-citizens, in all sections of our Union, to unite with us in this *central domestic* work in preference to dissipating the national energies upon circuitous routes, running near the equator, through foreign countries beyond our control, and certain to involve us in the competitions, the jealousies, and the hostile interests of foreigners and rivals.

10. *Resolved*, That we invite our fellow-citizens throughout the State to assemble in their counties and cities, and join in a general and unanimous response to the St. Louis Convention, and

unite with us in respectfully instructing our Representatives and Senators in Congress to vote for such measures as may be introduced at the coming session of our National Legislature to carry out the views embodied in the foregoing resolutions.

11. *Resolved*, That the Secretary of this Mass Meeting forward to each of our Representatives and Senators in Congress a copy of these resolutions.

Mr. George W. Rhoades offered the following resolutions :—

1. *Resolved*, That Col. Gilpin be requested to write out for publication the speech made by him to this meeting on to-day.

2. *Resolved*, That the "Missouri Commonwealth," and all other papers in this State friendly to a project of constructing a National Railroad to the Pacific from the "Valley of the Mississippi," be requested to publish the proceedings of this meeting.

III.

PIKE'S PEAK AND THE SIERRA SAN JUAN.

EXTRACTS FROM AN

ADDRESS BY COL. WILLIAM GILPIN,

DELIVERED AT KANSAS CITY, NOVEMBER 15TH, 1858; ON
THE GOLD PRODUCTION OF AMERICA AND THE SIERRA SAN
JUAN.

I SUBMIT to your inspection three maps. The first is an "Hydrographic Map of North America," exhibiting in dagnerreotype the physical divisions of our continent; the second is a map of the world, exhibiting America in the centre between Asia and Europe, and having delineated upon it the Isothermal Zodiac of Nations, filling the north temperate zone of the globe; the third is a map of the "Basin of the Mississippi."

Physical geography arranges the surface of the continents into basins and the mountain crests which divide them. Thus the basin of the Mississippi is that surface which, being drained by all the confluent branches of this river, discharges its fresh waters into the Gulf of Mexico. This surface is an undulating, calcareous plain of one million two hundred thousand square miles of area; it is embraced entirely within the temperate zone; occupies the heart and splendors of our continent, and is the most magnificent dwelling-place marked out by God for man's abode. Three more similar calcareous basins, each drained by a single system of rivers: the basin of the St. Lawrence; the basin of the Saskatchewan of Hudson's Bay; and the arctic basin of the McKenzie, resting upon one another and upon the basin of the Mississippi, form together one continuous expanse, geologically uniform and identical. This immense expanse defines itself as the Calcareous Plain of North America. Limestone horizontally stratified, underlies this whole expanse, being formed, like cheese from milk, from the sediment and pressure of the ocean which once rolled over it, but has now retired.

This calcareous plain, thus forming a unit in physical geography, embraces four-sevenths of the area of our continent. It is encompassed all round by a circuit of primary mountains, within which it forms an amphitheatre. These mountains are the Alleghanies, towards the Atlantic; the Cordilleras of the Sierra Madre and the Andes, towards the Pacific. The mouths of the great rivers form the doors or outlets through them to the oceans. This circumferent wall of mountains is of immense breadth toward the Pacific. It is the second unit in physical geography, and covers two-sevenths of the area of our continent. External to the mountain formation is the Maritime Slope, washed by the oceans, and penetrated by the tides. This external division is the third unit in physical geography, and forms all round one-seventh of the area of our continent.

Behold, then, the physical arrangement of our continent; at once simple, complete, and sublime:—the Calcareous Plain, four-sevenths; the Mountain Formation, two-sevenths; the Maritime Slope, one-seventh.

The geological structure of our continent has the same order, a like magnitude of dimensions and arrangements, a parallel simplicity. The Calcareous Plain is a uniform secondary formation of limestone, horizontally deposited and stratified. The Mountain Formation is of granite, presenting the primeval crust of the globe rent by volcanic forces, and elevated vertically. The Maritime Slope presents the external mountain base partly revealed, and partly covered by the washings of the sea.

Everybody is familiar with the manufacture of shot. This is accomplished by pouring liquid lead at a high elevation, through perforated moulds. Each pellet of lead descending through the air, is formed, as it cools, into a sphere, by the invisible force of gravity. The globe of the earth has had a similar origin—once a liquid mass, now a solid, gravitating sphere, such as we inhabit it. Geology explains how the material mass of this great sphere has arranged itself, in cooling, into layers enveloping one another, like the successive coatings of an onion. Specific gravity accounts for the relative position of these layers, one upon the other, and explains to us when and how to penetrate to their metalliferous contents. It is in the primeval rocks exclusively, that the precious metals and precious stones are found. The base metals are contained in the calcareous or secondary rocks. The same stupendous scale holds in the abundance of the metals, their purity, and their widely extended distribution.

It is your request that I speak, specially, on this evening, of the gold production of our country, and specifically of the region surrounding Pike's Peak and the Sierra San Juan. Specific gravity guides us to discover the rocks in which the precious metals may be found and where they are totally absent. If into a hollow pillar of glass there be poured a quart of quicksilver, one of water, one of oil, and one of alcohol, these liquids will rest one upon the other, in this order: if a piece of gold, of iron, of wood, and a feather, be thrown in, they will sink; the gold to the bottom, the iron to the quicksilver, the wood to the water, the feather to the oil. If this mass be congealed to ice, this arrangement will remain solid and permanent; the gold must be sought for sedimentary to the quicksilver; the iron above it, but

sedimentary to the water; the wood sedimentary to the oil. In the great order of nature, a similar arrangement holds in the rocks which compose the globe of the earth, and in their contents, once all liquid, but now permanently solid in the order of their relative specific gravities. It is the primeval mass, then, of the Mountain Formation, which alone is auriferous, and within it only can the precious metals, and especially gold, be sought for with success.

The Mountain Formation, which occupies the western portion of our continent to the extent of two-sevenths of its whole area, consists of the Cordillera of the Sierra Madre on the east, the Cordillera of the Andes on the west, and the Plateau of the Table Lands embraced between them. It is uniformly primeval and everywhere auriferous. The Plateau of the Table Lands commences above Tehuantepec, where the Cordilleras begin to open from one another. It runs through the continent to Behring's Straits, and is one thousand miles in width, in our latitude, (39°).

The general elevation of its surface is 6000 feet above the sea; that of the Cordilleras is 12,000 feet. The Plateau is traversed across by great mountain chains, which subdivide it into basins. Three of these basins contain, respectively, the great rivers, the Columbia, the Colorado, and the Rio del Norte, which gorge the Cordilleras, and escape to the seas. Three other basins contain the stagnant lakes, the Great Salt Lake, the Logana, and the Lake of the City of Mexico; these have no outlets or drainage to the seas. Of these mountain chains the most interesting to us is the Sierra Mimbres. This divides asunder the basins of the Colorado and the Del Norte, which rest against it as a backbone. It leaves the western flank of the Cordillera of the Sierra Madre, in latitude 39°, and, traversing the Plateau by a due southern course for 1400 miles, joins the Cordillera of the Andes in the Mexican State of Durango, in latitude 23°. This mountain chain is volcanic, containing craters and the overflow of lava. The Cordillera of the Andes is also volcanic. These mountain chains consist of the primeval rocks, broken from their original positions, heaved up edgewise by the expansive power of the internal fires

of the globe, and revealed to sight and search. Moreover, the Colorado river, in escaping to the sea, gorges the Cordillera of the Andes diagonally, having rent its way by a chasm bored through the very bowels of the Cordillera, athwart from base to base. This chasm, four hundred miles in length, is known as the Cañon of the Colorado. This cañon presents the unique and novel fact to mankind, that a primary mountain chain whose summit is of the auriferous rocks, is thus gorged to its foundations, many thousand feet in depth! It is here, upon the plateau, in the arcane of the mountain formation, and the activity of the stupendous forges of nature, that the precious metals may be sought in mass and in position. Moreover, the Sierra Mimbres, where its southern half bisects the Mexican States of Durango and Chihuahua, contains twenty-one mines of silver, which, wrought for three centuries by the Spaniards, have furnished the world with its silver coin and bullion. Moreover, where the Sierra Mimbres, in its course to the north, approaches to its junction with the Sierra Madre, it increases to a prodigious bulk. It rises to the altitude of perpetual snow, and assumes for two hundred miles the local name of Sierra San Juan. Here it is that the dislocation of nature by volcanic forces, and the consequent metalliferous development, attain their highest culmination.

What is about to follow the arrival of our pioneer people within this region, may be exactly illustrated by what is already done within the region of the great Calcareous Plain.

We have seen that the calcareous plain, being formed beneath a great ocean, condensed from its filtration and by its pressure, contains only the base metals, copper, iron, lead, zinc. A metalliferous band of these metals is traced diagonally across it, traversing from south-western Texas, through that State, through Arkansas, Missouri, Wisconsin, brushing the shores of Lake Superior and of Hudson's Bay, to the ocean shore opposite Greenland. Points of culmination of these various metals are found, where they reveal themselves above the general surface in mass and in position. Thus iron appears in Missouri in native purity, protruding in mountain masses over many hundred square miles

of surface; the same is the form of copper adjacent to Lake Superior; so also with lead in Missouri and in Wisconsin.

Now the same arrangement characterizes the immense primeval formation which occupies our continent from Cape Horn to Behring's Strait, and which is throughout impregnated with the precious metals! As gold is everywhere else found within it in the form of grains or scales, or minute lumps, so is it possible for it to culminate in mass and in position, where the auriferous rocks are upheaved to form the vertical masses of the Sierra San Juan and the Andes, and are then gorged into their bowels by the cañon of the Colorado.

The search for gold has heretofore confined itself to the external flanks of the primeval mountains, where they front the sea, and where the rivers descend from their backs. Why it has here been found only in grains, scales, and small lumps may be thus illustrated: I suppose myself at my camp-fire in the wilderness engaged in boiling rice; into a camp-kettle of boiling water I throw a cup of rice. This rice, after a time, settles by its specific gravity into a sedimentary mass beneath the water—the water above retains a milky whiteness. This whiteness is due to the presence of minute particles of rice remaining suspended through the body of the fluid. Being frozen into ice, this condition remains fixed in solid form. The presence of the gold in the auriferous rocks has had a similar origin, and presents identical conditions. It is the attrition of the elements upon the surface rocks and veins only that have as yet attracted attention. It is *beneath* that we must search for the sedimentary mass; the possibility to do which now first presents itself as we advance within the labyrinth of the volcanic masses and cañons of the plateau.

My own personal experience, earned during three military expeditions, made between the years 1844-'49, rendered desperate from the then unknown complication of the country added to the numerical strength and savage character of the Indians, is not without value. The facts then and since collected by me are so numerous and so positive, that I entertain an absolute conviction, derived from them, that gold in mass and in position and

infinite in quantity will, within the coming three years, reveal itself to the energy of our pioneers. All the precious metals and precious stones, will also reveal themselves in equal abundance in this region so propitious to their production. Such a development has nothing in it speculative or theoretical. It comes of necessity in the order of time, and as an inevitable sequence to the planting of empire in Texas, in California, in Oregon, in Kansas, and in Utah. As these other developments have preceded it in the order of time, and encompass it all round, this now comes to unite, to complete, to consummate the rest, and to give form and power and splendor to the whole.

The inquiry which acquaints us with the climate, the agriculture, and the domestic geography of this immense region, is still equally interesting and important as its metals. It was upon the summit of this plateau, where it traverses Mexico and Peru, that the semi-civilized empires of Montezuma and the Incas were found, when a sterile barbarism pervaded every other portion of the continent of America.

The distance hence to Pike's Peak is less than 700 miles. It is reached by the great road of the Arkansas river, traversing straight to the west, and ascending the imperceptible grade of the Great Plains clear to the mountain base. Gold is here discovered so soon as the primeval rocks rise from beneath the calcareous plain. Pike's Peak, which rises to the altitude of 14,500 feet above the sea, is the abrupt colossal termination of the mountain promontory, which, protruding eastward from the Cordillera 100 miles, sunders from one another the sources of the South Platte and the Arkansas rivers. Where this promontory connects with the Cordillera is a supremely grand *focal* point of primary mountain chains, primary rivers, and pares. This *focal* point is in the same latitude as San Francisco and St. Louis (39°), is about 1000 miles from each, and in the centre between them. The direction of the Cordillera is from north-west to south-east. From its western flank protrudes a promontory, balancing and similar to Pike's Peak, known as Elk Mountain; it sunders from one another the Grand river of the Colorado and the Eagle, terminating abruptly within the angle of their junction. Radiating due

south is the Sierra Mimbres, known for 200 miles by the snowy peaks of San Juan; this chain sunders the waters of Eagle river from the Rio del Norte. The southern arm of the Cordillera sunders the waters of the Rio del Norte from the Arkansas river: the northern arm, the waters of the Platte river from the Rio Grande of the Colorado. Such is this focal summit, from which five primary mountains and five rivers simultaneously depart. Upon the Platte is the pare known as the Bayou Salado; upon the Rio Grande of the Colorado, the pare known as the Middle Pare; upon the Rio del Norte, the pare called the Bayou of San Luis. The Arkansas and Eagle rivers have no pares, they defile outward through stupendous cañons. The pares, scooped out of the main dorsal mass of the Cordillera by the rivers which bisect them, are, each one of them, an immense amphitheatre of singular beauty, fertility, and temperate atmosphere; they approach one another where they rest against the Cordillera at the extreme sources of the rivers.

Behold, then, the panorama which salutes the vision of one who has surmounted this supreme focal summit of the Cordillera! Infinite in variety of features; each feature intense in the magnitude and the grandeur of its mould; in front, in rear, and on either hand, nature ascending in all her elements to the standard of superlative sublimity! Beneath, the family of Pares; around, the radiating banks of the primeval mountains; the primary rivers starting to the seas; above, the ethereal canopy intensely blue, effulgent with the unclouded sun by day, and stars by night; to the east, the undulating plains, expanding one hundred leagues, to dip, like the ocean, beneath the encircling horizon; to the west, the sublime Plateau, chequered by volcanic peaks and mesas, challenged as a labyrinth, by the profound gorges of the streams!

It is manifest with what ease the pioneers, already engaged in mining at the entrance of the Bayou Salado, will in another season ascend through it to the Cordillera, surmount its crests, and descend into the Bayou San Luis. They will develop at every step gold in new and increasing abundance. Besides, access is equally facile by the Huerfano, an affluent of the Ar-

kansas coming down from the Spanish Peak, 100 miles farther to the south. From New Mexico, the approach is by ascending the Rio Bravo del Norte. The snowy battlement of the Sierra San Juan form the western wall of the Bayou San Luis. From its middle flank the Sierra San Juan projects to the south-west a chain of remarkable volcanic mountains, known as the Sierra La Plata (silver mountain). This chain divides asunder the waters of the Great Colorado from the Rio San Juan, and, filling the angle of their junction, forms the perpendicular wall of the Great Cañon.

It is to this remarkable mountain chain, and its surrounding region, that I have desired to conduct you, and here stop, in the midst of the veritable arcana of the Mountain Formation and its metalliferous elements.

The Sierra la Plata is 400 miles in length, having its course west-south-west. Along its dorsal crest are volcanic masses penetrating to perpetual snow; its flanks descend by immense terraces of carboniferous and sulphurous limestone. All formations of the globe here come together, mingle with one another, acquire harmony, and arrange themselves side by side in gigantic proportions. Lava, porphyritic granite, sandstone, limestone, the precious and base metals, precious stones, salt, marble, coal, thermal and medicinal streams, fantastic mountains called cristones, or abrupt peaks, level mesas of great fertility, cañons, delicious valleys, rivers, and great forests; all these, and a thousand other varieties, find room, appear in succession, in perfect order, and in perfectly graceful proportions. Remoteness from the sea, and altitude, secure to this region a tonic atmosphere, warm, cloudless, brilliant, and serene. The aboriginal people are numerous, robust, and intelligent. They are the Navajos and Zuta Indians. They have skill in agriculture and weaving, rear great herds of horses, cattle, and sheep, but construct neither permanent nor temporary houses, so dry and favorable is the atmosphere! Here, also, occurs a remarkable, isolated mountain, known to rumor for half a century, but only now locally identified. This is Cerro di Sal (Salt Mountain). This rises among the western spurs of the Sierra la Plata, to an altitude of 9000 feet, appearing as an irregular cone of great bulk. A pure,

stratified mass of rock-salt, its flanks are channelled by the little river Dolores, whose waters, saturated with liquid salt, yield it again in its lower course, in granulated beds of snowy whiteness, tinted with vermilion streaks from the beds of selenite with which the salt formation alternates.

Such, my fellow-citizens, are the facts and reflections which I have selected for your attention, in speaking upon the gold region of Pike's Peak and the Sierra San Juan. The superlative character of this region engaged the enthusiastic pen and patriotic instincts of President Jefferson, more than half a century ago. Overshadowed during this long interval by political and military excitements, which have deflected elsewhere the progressive columns of our pioneer people, it now recurs to restore the pre-eminent continental character which inspired the generation who founded our republican Union.

Who, and what, are these people that I now address? We are not the people of the North; we are not the people of the South; nor of the East; nor of the West. We are emphatically, and *par excellence*, the people of the Centre! Inspirations, oracular by their source and their antiquity, admonish us to resume our distributive position, and develope the energies which assume and keep the lead.

Look upon this map of the world, upon which science delineates the zodiac of empires and the isothermal axis of progress! We have our homes around the centre of this our northern continent, the centre of our continental Union, the centre of the Mississippi basin. Behold, upon the right hand, the European continent, with its 260,000,000 of people; it slopes toward our eastern seaboard and faces toward the west! Behold, upon the left hand, the continent of Oriental Asia and its islands, with its population of 650,000,000; it slopes toward our western seaboard, and faces to the east! These external continents, dividing between them the population of the world, both face America and face one another across America. We occupy the middle space between them, and at once separate them asunder, and connect them together. From Paris to Peking, travelling by our threshold, is but a journey of 10,000 miles. It bisects the temperate zone—it is the line of land and way travel of mankind.

But a fact of profound significance to us, revealed by physical geography, remains to be considered. It is along the axis of the isothermal zone of the Northern Hemisphere, that the principles of revealed civilization make the circuit of the globe. This isothermal zone deflects from the geographical zone (which is a flat section of the globe), undulating to the north and to the south, to preserve a constant identity of temperature. Under the influence of the warm maritime climates, it rises high above the 40th degree of latitude; under the influence of the continental climates, it is depressed to the south of the 40th degree. With what the history of six thousand years practically demonstrates, the proofs of physical geography agree. Along this axis have arisen successively the great cities of China and of India, of Babylon, Jerusalem, Athens, Rome, Paris, London, in the older continents—upon our continent, the seaboard cities, New York, Philadelphia, and Baltimore; Pittsburg, Cincinnati, and St. Louis. The channel of the Missouri is its onward track to us: whence it passes by the Kansas basins, the Sweetwater, Snake river, and the Columbia, to Vancouver's Island, upon the South Pacific shore.

We, then, the people of the centre, are upon the lines of intense and intelligent energy, where civilization has its largest field, its highest developments, its inspired form. Along this line have come, from the plateau of Syria, our religion, our sciences, our civilization, our social manners, our arts and agriculture, the horse, our articles of food and raiment; and here is the eternal fire from which is rekindled, when it has expired, the spirit of the "unconquerable mind, and freedom's holy flame."

We have seen depart a perverse generation, distinguished by civic discord. An unscrupulous seaboard power has aspired to found a republic of the North; a republic of the South; a republic of the Pacific shores. A nefarious federal policy, operating for forty years, has occluded with savages and deserts, the delicious central region of the prairies, the great plains, the plateau, and the mountains. The physical geography of our country has been officially caricatured, concealed, and maligned. The solid continental republic, founded in 1776, and completed in 1787, has

been nullified by interpolated monarchies. The Land system has crushed and plundered the continental people with the brutalizing pressure of mediæval feudalism. The Indian system has walled up, as in a Bastille, the whole central meridian of our continent. Forced out artificially upon the flanks, we have seen our pioneer energies driven in fragments into Florida, into Texas, into California, into Oregon, into Minnesota. We behold on the one hand a tier of artificial seaboard States, isolated upon the maritime slope; on the other hand, the continental centre, an immense disc of howling wilderness.

Foreign wars have been waged, federal revenues and patronage exhausted, federal law and power stretched out to every device of tyranny, the federal constitution violated in every sacred principle, to erect this monarchical seaboard power, and establish it in perpetual dominance over the continent. For the centre, civil wars, civil discords, false geography, calumnies, every form of meretricious and deceptive political agitation, have been suicidally fomented. The foundations of the Union, lost in the centre and scattered around an invisible circumference; the Union itself, incessantly assailed and perpetually menaced, has seemed to approach the twilight of its existence, and, lost to the guardian care of the people, has been in suspense between the infuriated passions of extreme sectional fanatics. Our great country demands a period of stern virtue, of holy zeal, of regenerating patriotism, of devoted citizens.

It is to the people of the great central State of Missouri that I speak. To exalt their intrepid enthusiasm is my aim. Open the track across the plateau to the other sea, and we are absolutely the leaders of the world, heading the column to the oriental shores. With us are the continental eagles and the continental cause, immortalized by the purity of Washington, illuminated by the wisdom of Jefferson, vindicated and restored by the illustrious Jackson. Let us condense around these eagles and advance. It is the predestined mission of mankind, confided to America to fulfil, to our generation, to complete.

Day dawns, the vapors round the mountains curled
Burst into morn, and light awakes the world!

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